



Norwegian National Accounts - GNI Inventory for ESA 2010

2019 version

TALL

SOM FORTELLER

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Preface

This document provides a comprehensive documentation of data sources and methods for calculating the central variables gross domestic product (GDP) and gross national income (GNI) in the Norwegian national accounts. The documentation covers the first published final version for the year 2019, published in November 2021. The document, referred to as the GNI Inventory for Norway 2019, follows a template the EU statistical office Eurostat has initiated and was sent to Eurostat at the start of the year 2022. In line with the template from Eurostat, the documentation only includes calculations of current prices figures, and not price and volume estimates.

This edition of the GNI Inventory is an update of the 2015 version. Many staff members in the Division for national accounts and other divisions in Statistics Norway have participated in the work on the update. Gang Liu and Steinar Todsén have been editors of the document.

Statistisk sentralbyrå, 19 March 2023

Lasse Sandberg

Innledning og sammendrag

Dette notatet gir en samlet dokumentasjon av datakilder og metoder for beregning av de sentrale variablene bruttonasjonalproduktet (BNP) og bruttonasjonalinntekten (BNI) i det norske nasjonalregnskapet. Dokumentasjonen dekker den først publiserte endelige versjonen av 2019-årgangen, publisert i november 2021. Notatet, omtalt som GNI Inventory for Norge 2019, følger en mal EUs statistiske kontor Eurostat har initiert og ble til oversendt til Eurostat ved inngangen til året 2022. I tråd med malen fra Eurostat, omfatter dokumentasjonen kun beregninger av tall i løpende priser, ikke pris- og volumberegninger.

BNP tilsvarende den engelske forkortelsen GDP (Gross Domestic Product) og er et mål på samlet økonomisk aktivitet innenfor et økonomisk territorium (Norge i vårt tilfelle) og uttrykker den økonomiske merverdien som opptjenes gjennom produksjon. BNP er målt i markedsverdi, og kan defineres og bestemmes ut fra tre ulike metoder: henholdsvis produksjonsmetoden, utgiftsmetoden og inntektsmetoden.

BNI tilsvarende det som på engelsk kalles GNI (Gross National Income), og omfatter inntekt som tilfaller innlendinger (fastboende, dvs. nordmenn og utenlandske statsborgere bosatt i Norge) fra innenlandsk produksjon og av formuesplasseringer i utlandet. I tillegg kommer lønn fra utenlandske arbeidsgivere, fratrukket utlendingers inntekt av formuesplasseringer i Norge og utlendingers lønn fra norske arbeidsgivere. Det vil si at BNI kan beregnes som:

Bruttonasjonalprodukt
- Formuesinntekt og lønn til utlandet
+ Formuesinntekt og lønn fra utlandet

Det norske nasjonalregnskapet utarbeides av Statistisk sentralbyrå (SSB) etter prinsippene i European System of Accounts ([ESA 2010](#)). Dette er felles for alle landene i det europeiske statistiske systemet (ESS). For Norges del er det en del av EØS avtalen.

I EU er BNI en viktig størrelse, som brukes blant annet som administrativt grunnlag for å fastsette størrelsen på betalingene fra medlemslandene til det felles EU-budsjettet. Derfor er det viktig at alle medlemslandene følger de samme prinsippene (i ESA) og metodene, slik at beregnede nivåer for BNI i de ulike landene er pålitelige og sammenlignbare. For å sikre dette har EUs statistikkbyrå Eurostat et [program](#) for verifisering av BNI tallene.

Sentralt i denne verifiseringen er at landene utarbeider detaljerte beskrivelser av kildegrunnlag og beregningsmetoder for BNP og BNI etter en mal fra Eurostat. Denne beskrivelsen, som kalles GNI Inventory, utarbeides omtrent hvert femte år. Nasjonalregnskapet utarbeides i flere varianter med ulikt kildegrunnlag og metoder, månedlig, kvartalsvis og årlig. GNI Inventory beskriver de mest detaljerte årlige beregningene. Kapitlene 3 til 7 dekker BNP beregningene i løpende priser, men kapittel 8 beskriver overgangen fra BNP til BNI, med beregning av formuesinntekter og lønn til og fra utlandet. Kapittel 1 er en oppsummering av innholdet i de andre kapitlene. GNI Inventory dekker ikke beregningene av volum- og prisendringer. Disse er beskrevet i et eget [notat](#).

Kildene og beregningsmetodene i nasjonalregnskapet er i stadig utvikling. Med noen års mellomrom innarbeides nye datakilder og beregningsmetoder. Endringer som gir brudd i forhold til tidligere beregnede og publiserte tall, innarbeides fortrinnsvis i form av revisjoner i tilbakegående tallserier for å sikre konsistens mellom tall for ulike perioder (år, kvartaler, måneder).. Slike gjennomgående kvalitetsforbedringer eller definisjonsendringer vil normalt «samles opp» til periodevis revisjoner av

tallserier, gjerne omtalt som hovedrevisjoner. Forrige hovedrevisjon ble utført i 2019, og neste hovedrevisjon er planlagt til 2024. I forbindelse med publisering av endelig nasjonalregnskap for 2020-årgangen høsten 2022, ble det imidlertid utført en mellomrevisjon (en "ekstra" revisjonsrunde mellom to hovedrevisjoner). De viktigste tilbakegående revisjonene var:

- Forbedring av beregningene av vederlagsfrie banktjenester, såkalt FISIM (Financial Intermediation Services Indirectly Measured).
- Endret beregningsopplegg for sentralbankens aktivitet.
- Endret datagrunnlag og føringer for produksjonsprosesser som går på tvers av landegrensene, der varene sendes over landegrensene uten skifte av eierskap (prosessering) og inntekter knyttet til kjøp og salg av varer i utlandet (mellomhandel).

Gjennomføringen av mellomrevisjonen innebærer at de sist publiserte tallene for 2019, ikke er helt i samsvar med GNI Inventory for Norge for 2019. For en mer detaljert omtale av endringene som ble gjennomført som del av mellomrevisjonen høsten 2022, se [dokumentet som omtaler publisering av kvartalsvis nasjonalregnskap for 3. kvartal 2022 og endelig nasjonalregnskap for 2020, avsnitt 4.3 og kapittel 5.](#)

Introduction and summary

This document provides a comprehensive documentation of data sources and methods for calculating the central variables gross domestic product (GDP) and gross national income (GNI) in the Norwegian national accounts. The documentation covers the first published final version for the year 2019, published in November 2021. The document, referred to as the GNI Inventory for Norway 2019, follows a template the EU statistical office Eurostat has initiated and was sent to Eurostat at the start of the year 2022. In line with the template from Eurostat, the documentation only includes calculations of current prices figures, and not price and volume estimates.

GDP is a measure of total economic activity within an economic territory (Norway in our case) and expresses the economic added value that is earned through production. GDP is measured in market value and can be defined and determined based on three different methods: The production method, the expenditure method and the income method, respectively.

GNI includes income accruing to nationals (permanent residents, i.e. Norwegians and foreign nationals living in Norway) from domestic production and from asset investments abroad. In addition, there is compensation of employees from foreign employers, minus foreigners' income from asset investments in Norway and foreigners' salary from Norwegian employers. This means that GNI can be calculated as:

Gross domestic product

- Property income and compensation of employees to abroad
- + Property income and compensation of employees from abroad

The Norwegian national accounts are prepared by Statistics Norway (SSB) according to the principles of the European System of Accounts (ESA 2010). This is common to all countries in the European Statistical System (ESS). For Norway, this is part of the EEA agreement.

In the EU, GNI is an important figure, which is used, among other things, as an administrative basis for determining the payments from the member states to the common EU budget. It is therefore important that all member states follow the same principles (in ESA) and methods, so that calculated levels of GNI in the various countries are reliable and comparable. To ensure this, the EU's statistical agency Eurostat has a program for verifying the GNI figures.

Central to this verification is that the countries prepare detailed descriptions of the data sources and calculation methods for GDP and GNI according to a template from Eurostat. This description, called the GNI Inventory, is prepared approximately every five years. The national accounts are prepared in several versions with different sources and methods, monthly, quarterly and annually. The GNI Inventory describes the most detailed annual calculations. Chapters 3 to 7 cover GDP calculations in current prices, while chapter 8 describes the transition from GDP to GNI, with the calculation of property income and compensation of employees to and from abroad. Chapter 1 is a summary of the content of the other chapters. The GNI Inventory does not cover the calculations of volume and price changes. These are described in a separate note.

The sources and calculation methods in the national accounts are constantly evolving. Every few years, new data sources and calculation methods are incorporated. Changes that cause a break in relation to previously published figures are preferably incorporated in the form of revisions in backward series of figures to ensure consistency between figures for different periods (years, quarters, months). Such continuous quality improvements or definition changes will normally be

"collected" to periodic revisions of number series, usually referred to as main revisions. The previous main revision was carried out in 2019, and the next is planned for 2024. However, in connection with the publication of the final national accounts for the year 2020 in the autumn of 2022, an interim revision (an "extra" round of revisions between two main revisions) was carried out. The main retroactive revisions were:

- Improvement of the calculations of free banking services, so-called FISIM (Financial Intermediation Services Indirectly Measured).
- Changed the calculation for the central bank's activity.
- Changed data sources and methods for production processes that go across national borders, where the goods are sent across national borders without a change of ownership (processing) and income related to the purchase and sale of goods abroad (merchanting).

The implementation of the interim revision means that the most recently published figures for 2019 are not entirely in accordance with the GNI Inventory for Norway for 2019. For a more detailed discussion of the changes that were carried out as part of the interim revision in the autumn of 2022, see the document that discusses [the publication of quarterly national accounts for the 3rd quarter of 2022 and final national accounts for 2020](#) (in Norwegian only), section 4.3 and chapter 5.

ABBREVIATIONS (ACRONYMS)

A-melding	= Register of jobs, remuneration, social benefits and taxes paid
BCA	= Budgeting Committee for Agriculture
BERKAP	= BERegning av KAPital (System for PIM estimations)
BoP	= Balance of Payments
BR	= Business Register
CCRLE	= Central Co-ordinating Register of Legal Entities
CFC	= Consumption of Fixed Capital
C.I.F.	= Cost Insurance Freight
COE	= Compensation of Employees
COFOG	= Classification Of Functions Of Government
COICOP	= Classification Of Individual CONsumption by Purpose
CPA	= Classification of Products by Activity
CPI	= Consumer Price Index
CREE	= Central Register of Establishments and Enterprises
EEA	= European Economic Area
ESA	= European System of Accounts
FISIM	= Financial Intermediation Services Indirectly Measured
FNA	= Former Norwegian National Accounts
F.O.B.	= Free On Board
GAB	= Grunneiendom-Adresse-Bygning (Land property-Address-Building)
GDP	= Gross Domestic Product
GFCF	= Gross Fixed Capital Formation
GNI	= Gross National Income
HBS	= Household Budget Survey
HFCE	= Households' Final Consumption Expenditures
HORECA	= HOtels, REstaurants and CAtering
IC	= Intermediate Consumption
INTRASTAT	= Statistics relating to the trading of goods between EU Member States
I/O	= Input/Output
ITRS	= International TRansactions Statistics
KAU	= Kind of Activity Unit
KOSTRA	= KommuneStatRApportering (Municipality-State-Reporting)
LA	= Labour Accounts
LFS	= Labour Force Survey
LKAU	= Local Kind of Activity Unit
NA	= National Accounts
NACE	= Nomenclature statistique des Activités économiques dans la Communauté Européenne
NCS	= Norwegian Confederation of Sports
NLA	= Norsk LuftAmbulanse (Norwegian air ambulance foundation)
NA	= National Accounts
NNA	= Norwegian National Accounts
NO	= Nærings Oppgave (Directorate of Taxes' Income Statements)
NOK	= NORwegian Kroner
NORAD	= NORwegian Agency for Development cooperation
NPI	= Non-Profit Institution
NPISHs	= Non-Profit Institutions Serving Households

NRK	= Norsk RiksKringkasting (Norwegian Broadcasting)
NSB	= Norges StatsBaner (Norwegian State Railway)
PIM	= Perpetual Inventory Method
PRODCOM	= "PRODUCTION COMMUNAUTAIRE" (Community Production)
RHE	= Regional Health Enterprise
RT	= Retail Trade
RWS	= Register of Wages and Salaries
SAD	= Single Administrative Document
SAS	= Scandinavian Airline System
SBS	= Structural Business Statistics
SN	= Statistics Norway
SNA	= System of National Accounts
SPE	= Special Purpose Entity
SUT	= Supply and Use tables
TS	= Tilleggs Skjema (Supplementary form to NO)
UCI	= Undertakings for Collective Investments
UNSTAT	= United Nations' Statistical Office
UT	= Utenriks Transaksjoner (External Transactions)
VAT	= Value Added Tax
W&S	= Wages and Salaries

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CHAPTER 1 OVERVIEW OF THE SYSTEM OF ACCOUNTS

1.1 Introduction

Main approaches used and some history

1.1.1 GDP is calculated within a detailed system of annual supply- and use tables (SUT) in the Norwegian National Accounts (NNA). Within the SUT, the approaches used to calculate GDP are multi-dimensional. With the strong emphasis on industrial breakdown, **the production approach** is thus regarded as **the main approach**. **The expenditure approach** is also much used through the supporting use of **the commodity-flow method**. Until recently, **the income approach** has played a minor role, but has a more decisive role along with the continuous development of complete institutional sector accounts following an integrated accounting approach. The increased use of accounting data over the last decade underlines this development. Most important, the **product dimension** is a very distinct element in the Norwegian approach to national accounting, thanks to the long presence of annual SUT being integrated in the NNA.

1.1.2 The **Norwegian System of National Accounts** has a long tradition compared with most of the other countries. In Norway - as in several other countries - the **first phase of the history of national accounts** was characterised by studies aiming at estimating the value of national income, typically based on tax assessment statistics. The first work of this kind dates back to 1891. The **second phase** occurred in the 1930s when Professor **Ragnar Frisch** set out to design a general national accounting system. His project was to incorporate a detailed empirical description of Norwegian economic life, industry by industry, in national accounting terms. The empirical work on national accounting started by Frisch was, however, too ambitious at that time. But his work had a solid theoretical underpinning, which proved to be fundamental for the later development of national accounts in Norway. The term '*nasjonalregnskap*' (national accounts in Norwegian) was already used in print in 1933 and Frisch's system of economic concepts ('The Eco-circ System') became worldwide renowned.

1.1.3 In describing the **NNA of today**, it is easy to recognise and striking to see how important the influence from Frisch's tradition is. The early introduction of a "modern" national accounts system in Statistics Norway was led by **Odd Aukrust** in the years following World War II. The early Norwegian national accounting system was based on the concepts and definitions taken over from Frisch's Eco-circ System, combined with an accounting structure along the lines proposed by Professor Richard Stone in his paper to League of Nations in 1947. The influence from Wassily Leontief's pioneering work on input-output analysis was also of certain importance. The empirical work by Aukrust covered the periods 1930-1939 and 1946-1951. A theoretical discussion of the principles underlying the estimates was completed in the early 1950s and became an important milestone in respect of national development as well. Moreover, Aukrust's work contributed to facilitating the international intension to revise the then UN System of National Accounts, which later became the 1968 SNA.

1.1.4 Generally speaking, the NNA contains a **number of important characteristics**, among which the following ones have been considered particularly significant:

-	Emphasis on the real economy
-	Input-output framework and annual integration
-	Supply and use tables and commodity flows
-	Detailed breakdown
-	Full integration with Balance of Payments
-	NA important for integrating and co-ordinating economic statistics
-	NA extensively used in national budgeting and economic model analysis

1.1.5 Already in the pioneering years of Frisch and Aukrust, there was one standpoint that "**real phenomena**" was what really mattered. It also reflected the particular interest public authorities showed in the real flows in economy. Moreover, the early statistical base appeared to be considerably better for production statistics than for income and financial statistics. Therefore, the production approach turned out to be an apparent choice of the main approach for computing GDP.

1.1.6 Norway is one of the few countries that had very **early (since 1952) input-output tables (read: supply and use tables)** integrated into the annual national accounts. The background for this integration was both analytical and statistical, and eventually also methodological as the input-output structure became one of the main features of SNA68. The **input-output tables** played a considerable analytical role already in the economic models of the 1960s, as an empirical basis for use in the work on national budgeting and macro-economic planning. Another favourable condition was that the large data bases necessary to draw up these tables traditionally existed. Most important, detailed annual statistics for manufacturing industries had existed since the 1920s.

1.1.7 **Supply and use tables** and commodity flows have played a fundamental role in the Norwegian National Accounts for several decades. The SNA93 and ESA95, and the updated 2008 and 2010 versions (i.e., 2008 SNA and ESA 2010), more explicitly than ever, emphasized their role as an accounting framework within which the commodity flow method of compiling national accounts can be systematically exploited. That is, total supply and total use of individual types of goods and services have to be balanced with each other, which subsequently provides the primary information and serves as the statistical basis for the derivation of **input-output tables** for purposes of economic analysis and projections. It goes without saying that **detailed breakdown** characterises the NNA along with their supply and use and input-output tables.

1.1.8 In Norway, considerable emphasis has been placed on having the national accounts play a **co-ordinating and integrating role** in relation to other economic statistics, for example, for the use of joint definitions, classifications etc. Furthermore, Statistics Norway has stressed the importance of bringing together its role as both **producer and main user** of national accounts. Within Statistics Norway, activities such as **economic modelling work** (national accounts as basic structure), **analysis of business cycles** (based on quarterly accounts data) and **describing external economy** (balance of payments that is fully integrated in national accounts) are important tasks. In the NNA, the integration of basic statistics with basic accounts of institutional sectors has had a slower pace. However, integrated financial flows with institutional sector accounts have been explored and developed to a more advanced level. The reallocation of the statistical division of Norges Bank (the central bank of

Norway) to Statistics Norway has further facilitated the full harmonisation and integration of the traditional national accounts with the financial accounts statistics. Thus, a long-expressed aim of integrating institutional sector accounts has now become almost achieved, a significant step towards the ideal framework as presented in the new international standard of national accounts systems (i.e., 2008 SNA and ESA 2010).

1.1.9 Statistics Norway has been a firm follower of **international recommendations** in the area of national accounts. When 1968 SNA was implemented in 1973, the full SNA matrix framework was established as the framework for the Norwegian national accounts. In the period from 1973 to July 1995, 1968 SNA served as the international standard for the Norwegian national accounts. The European Community version, ESA, was never adhered to during that period. The new situation with harmonised principles of 1993 SNA and ESA 1995 implied that Norway should follow **ESA from 1995 onwards** as a formal approach. In fact, by disseminating its first results in July 1995, Norway was the **first country in Europe to adopt ESA 1995** as the new international systems of national accounts. In 2014, Norway adopted the new updated **ESA 2010** as international standard along with the other European countries.

1.1.10 In describing approaches used to calculate GDP, it may seem a bit simple to just refer to the three main approaches: production, expenditure, and income approaches. A **more articulated scheme** of approaches had been presented by UNSTAT in 1994. According to that scheme, various options or combinations, such as those listed in the following three main classes, are possible for estimating GDP:

1.	Production-Income-Expenditure Approaches
1.1	One of the approaches, without data reconciliation check
1.2	Two or three of the approaches, but not entirely independent
1.3	Three approaches in parallel, but to different industries
1.4	Three approaches simultaneously and independently
2.	Commodity Flow Approaches
2.1	Aggregated structural parameters from benchmark year for product approach
2.2	Annual aggregated information for product approach
2.3	Detailed structural parameters form benchmark year for product approach
2.4	Annual detailed information for product approach, not entirely independent
2.5	Annual detailed and independent information for product approach
3.	Integrated Accounting Approaches
3.1	Integrated accounting approach for data reconciliation
3.2	Integrated accounting approach as data check

1.1.11 **Class 1 approaches** may be seen as direct approaches used to calculate GDP. **Class 2 approaches** bring in product detail as an additional dimension. **Class 3 approaches** bring in other dimensions, in particular flows of income, but also capital and financial flows and stocks. Class 1 and Class 3 represent macro-oriented methods in which economic units (transactors) are in focus, while Class 2 is more micro-oriented with products brought into focus. Countries using Class 2 approaches (or Class 3 approaches) in addition to Class 1 are better off than without doing so. Countries using both Class 2 and Class 3 approaches in addition to Class 1 are even better off. In Class 3, types of income and outlays as well are brought into the balancing at detailed level. Thus, there is a wide range

of cases from the most primitive case of 1.1 to the most sophisticated case of 1.4, when combined with 2.5 and 3.2. Within each class, approaches are listed by increasing order in terms of complexity, e.g., within Class 1 from 1.1 at the low end to 1.4 at the top.

1.1.12 The situation of the GDP estimation in Norway is quite favourable. First, Norway applies several standard direct approaches to estimate GDP (Class 1). Second, attached to them are also supporting approaches that bring in integration of a product dimension (Class 2). Third, and more recently, other dimensions are introduced in the sphere of income flows, capital and finance flows and stocks (Class 3). In the former Norwegian national accounts (NNA) before the implementation of SNA93/ESA95 in 1995, approaches 1.3 and 2.4 in combination may be seen as a general characterisation of the main approach to calculate GDP. In the NNA after 1995, however, approaches **1.3, 2.4 and 3.1 in combination** appeared to be a general characterisation of the main approach to calculate GDP.

1.1.13 In Norway, the data situation has been characterised by having more abundant statistics on domestic production, exports, and imports than on incomes and expenditures, thus leading to the appraisal that **the production approach** is the main approach used to estimate GDP *per se*. At the industry level, however, value added may not always in the first place be estimated from using the production approach, *inter alia* because reliable data for intermediate consumption may not exist, as a result, value added must be estimated by either **the expenditure approach** or **the income approach**. However, after the more elaborated use of accounting statistics in the NNA, this situation seems to be more and more rare. Both the expenditure and income approaches are improved, when used in combination with Class 2 approach (the expenditure approach combined with the commodity-flow approach) or Class 3 approach (the income approach combined with integrated accounting approach).

1.1.14 **The production approach** is, technically speaking, applied to compute value added for all industries. This is done within the framework of detailed SUT on annual basis and by making use of the commodity-flow method.

1.1.15 **The expenditure approach** is used for computing government final consumption expenditure based on government accounts, and for exports (and imports) based on external trade statistics and other supplementary sources. The expenditure approach is also used as a main method in computing household final consumption expenditure and gross fixed capital formation, combined with the detailed commodity-flow method.

1.1.16 **The income approach** is used in general to obtain estimates on components of GDP, *inter alia* compensation of employees, but not for operating surplus. Operating surplus is rather estimated as a balancing item arrived at residually. During the last decade, however, independent estimation of gross operating surplus from accounting statistics has modified this position somewhat (serving as a control for the estimates on a more aggregated level). This has been even more apparent since the introduction of the Structural Business Statistics (SBS) because the source data for estimating operating surplus are the same for both the establishment-based industries and the institutional sectors, i.e., the NO (*Nærings Oppgave* in Norwegian) which is Directorate of Taxes' Income Statements. The income approach is also used to compute value added of the non-market (government and NPISH) industries.

1.1.17 Main changes over the last 25 years are that from an earlier use of the production approach as the main approach, along with the steady increase in the availability of census-like information on industries (the SBS and others), and the utilisation of accounting statistics for enterprises, the income approach has also been widely applied now. Nonetheless, product data still play a very important role through the balancing of detailed supply and use tables on annual basis.

Geographical coverage

1.1.18 The Norwegian territory includes mainland Norway, the Norwegian part of the Continental Shelf, and the Arctic islands of Svalbard, Jan Mayen and Bjørnøya. It should be noted that **Svalbard** has a special jurisdiction, i.e., the Treaty of Svalbard states equal treatment with respect to access, residence, and activity for all their treaty partners within the framework of local laws and regulations. In terms of territories, Norway has excluded Svalbard from being part of the international EEA treaty. However, Norwegians' activities on Svalbard are included in GDP of Norway, while for various practical reasons the Russian owned activities in Barentsburg have in the past not been included in the Norwegian statistics. The other extreme position, to leave out economic activities all together as a consequence of the exclusion from the EEA, has been discussed, but not been taken into effect. The statistical situation on Svalbard is however about to change. One aspect is that the Norwegian Statistical law came into force on Svalbard as from 1st January 2007, initiating work to strengthen statistical description of activities on Svalbard in general. Another aspect is that Russian enterprises from 2011 are registered in the Norwegian National Register of Legal Units (*Enhetsregisteret* in Norwegian) and the Norwegian register of Company Accounts (*Brønnøysund registeret* in Norwegian). For the future, it is thus expected that the Russian units operating on Svalbard on a permanent basis are to be included in the population of Norwegian Statistics, and subsequently, the activities by them as part of Norwegian GDP.

1.1.19 Geographical coverage is expressed in three different contexts of the NNA at large. These are (i) **Rest-of-the World and Balance of Payments (BoP) Accounts**, (ii) **Regional Accounts**, and (iii) the **Central Framework of National Accounts**. In the **BoP**, the concepts of resident and territory are vital, cf. the cited definition of the Norwegian territory given above in three parts: mainland Norway, oil activities in the North Sea, and the island belonging to Norway in the Arctic named Svalbard. In the **Regional Accounts**, the main activities connected with the oil and gas extraction on the Norwegian Continental Shelf are allocated to the extra-region. The extra-region is a notional county and only two industries have been allowed to have activity in this extra region, i.e., oil and gas extraction and transport via pipelines. Transport via pipelines is fully allocated on the Norwegian Continental Shelf, while for oil and gas extraction some activity like administration is allocated on mainland Norway. It is an important principle in Eurostat's regional accounts manual that all economic activity is distributed to the county where the producing company is actually located. Meanwhile, services related to oil and gas extraction, and ocean transport are only allocated to the regions on mainland Norway in the Norwegian Regional Accounts. For example, for ocean transport, the registration of shipping company will decide to which region economic activity will belong to, even if the activity is generated at the sea. According to the manual on regional accounts methods, industries that have mobile capital must have their production county where the enterprise is registered. In 2019, 18 counties were allocated on mainland Norway. From 2020 there will only be 11 regions on mainland Norway due to merging of counties. In the **Central Framework of the NNA**, a fundamental distinction is made between **Mainland Norway** and Petroleum activities and ocean transport (activities not considered part of Mainland Norway economy). The former, seen as an important analytical concept, essentially represents the domestic economy, while the latter is either activities generating super-profit (economic rent in oil- and gas extraction) or mostly foreign or export generated activities of the Norwegian economy (ocean transport).

1.1.20 Some **illustrations** on the magnitudes involved in these **geographical distinctions** are given below using 2019 figures:

GDP and value added by geographical distinctions. 2019.

Value added	NOK billion	Percentages
GDP	3563.5	100.0
Petroleum activities and ocean transport	500.5	14.0
Extra-region	438.9	12.3

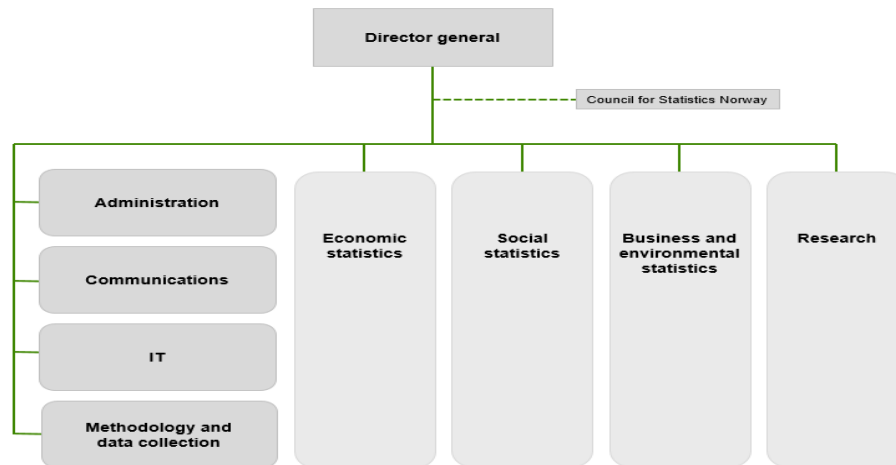
1.1.21 The reason why the value of the extra region is less than that of the two industries oil and gas extraction excluded services and transport via pipelines is mainly because the industry of oil and gas extraction has some activities allocated on Mainland Norway, as mentioned above. For instance, administration and some of activities by engineers are allocated on the mainland Norway.

Organisation and responsibilities within Statistics Norway

1.1.22 Official statistics in Norway is **centrally organised**. The **Statistics Act of 2021** stipulates that Statistics Norway is the central body for preparation and dissemination of official statistics, while administratively subordinate to the Ministry of Finance. The statistics Act of 2021 replaced the Statistics Act of 1989. The assembling of source data used to establish the NNA 2019 is based on the Statistical Act of 1989. About 70 per cent of Statistics Norway's tasks are funded over the central government budget, while around 30 per cent are funded by other users, including government ministries, directorates, and universities.

1.1.23 An important provision is **Statistics Norway's access to administrative data systems** for the production of statistics and the right to be involved in the establishment of new administrative data systems in public administration or major changes to existing ones. Moreover, Statistics Norway has been assigned co-ordination responsibility when administrative bodies are to carry out major statistical surveys. Statistics Norway collects information by means of written questionnaires to companies and institutions, personal interviews at home, telephone surveys and administrative data systems. The use of administrative data systems has increased over the last years and has thus reduced the need for **form-based data collection**. In addition, there has been a trend towards more electronic reporting of forms rather than paper-based reporting.

1.1.24 **Statistics Norway** is divided into eight departments, and had in 2020 a staff of approximately 840, of which 500 are working in Oslo and 340 in Kongsvinger, a small town about 100 km north-east of Oslo. There are three statistical departments – Economic Statistics, Social Statistics, Business and environmental Statistics – plus one department for Research, one department for Administration, one department for Communication, one department for IT, and another one department for Methodology and data collection.



1.1.25 The Economic statistics department includes in 2021 the following units or divisions:

Organisation of Department of Economic statistics. 2021.

<i>Code</i>	<i>Division name</i>
210	National accounts
211	Financial accounts
212	Public finance
213	Financial markets statistics
214	External trade statistics
216	International development cooperation
240	Price statistics

1.1.26 As shown, **National Accounts Division** belongs to the Department of Economic statistics in Statistics Norway. In 2021, the NA unit has about 28 staff members, most of them with degrees in economics. The allocation of the staff resources to the main fields of national accounts is indicated below:

Resources used on the NNA work in different areas. 2021.

<i>Work area</i>	<i>Man-years</i>
Central annual accounts work	8
Institutional sector accounts	7
Monthly/Quarterly accounts	6
General administration	1
Balance of payments	3
Labour accounts	1
Regional accounts	1
Satellite accounts	1
Total	28

1.1.27 It should be noted that the division of labour resource is organised according to the NA category in such a way that the same person will be responsible for a category in both monthly, quarterly and annual accounts. For example, the same person will be responsible for figures of a particular industry in both monthly, quarterly and annual accounts, or the same person will be responsible for the exports and imports figures in both the Rest of the World account of the national accounts and in the Balance of Payments. Also, the persons working on supporting and satellite accounts will all be responsible for various parts of the central NA system.

1.1.28 The NA unit is supported by other units, such as specialised divisions on administrative tasks and computer processing. The NA unit **collaborates closely** with the Divisions for Public finance, Financial markets statistics and Financial accounts on government data and institutional sector accounts, Balance of payments, and Financial accounts statistics.

Supervisory and control systems

1.1.29 Producing and publishing the national accounts (NA) are the result of multiple processes, each involving varying degrees of risk. The important question then is how the risk should be addressed, and how it can be controlled.

1.1.30 Various measures can be taken to tackle the risk in national accounts compilation and publishing process. In this chapter, the following elements of a system for dealing with the risk are described:

- monitoring statistical sources,
- control and validation of source data,
- management quality assurance and
- internal audit.

This is in line with the international recommendations from Eurostat on the description of the *national accounts supervisory and control systems*.

1.1.31 Our focus is on the risk related to the current running operations of national accounts systems, while the risk related to development programmes are less emphasized. Before elaborating in more detail on risk factors in compiling the NNA, an introduction is given to the institutional setting of Statistics Norway and the institution's general policy and efforts in the field of quality work.

1.1.32 The new Statistics Act was approved by the Norwegian National Assembly (*Stortinget* in Norwegian) in 2019 and entered into force in its entirety on 1st January 2021. It stipulates that Statistics Norway be the central body for the development, production, and dissemination of official statistics in Norway, and that it should be professionally independent in the performance of its tasks. The Government approves the establishment of a multi-year national programme for official statistics that stipulates which statistical activities should be covered and which public authorities be responsible for the statistics. The Finance Ministry appoints a committee for official statistics, whose members mainly represent authorities responsible for official statistics. The committee is led by Statistics Norway. An independent council with a broad-ranging composition has been appointed for Statistics Norway. The council shall advise on any matter that is presented to it by the director general of Statistics Norway, and it may also advise the director general on its own initiative.

1.1.33 Of high importance is also the privilege given by law to Statistics Norway to use administrative data-processing systems in the state administration and in nationwide municipal organisations as the basis for official statistics. This fact and the policy of user orientation have led to the establishment of **advisory bodies** where the external members represent both user segments and data suppliers. Here broad discussions take place on reporting, statistical methods, and the dissemination of statistics. The final word lies however, in all subject matters, with Statistics Norway.

1.1.34 Within Statistics Norway, there has been a clear development over the last decade, inspired by the international trends to improve the quality of the statistics by focusing more sharply on controlling the processes behind the production and dissemination of statistics, see Sæbø (2009)¹. Several initiatives can be mentioned to illustrate this, such as training of statistical guides, introduction of systems for enhancement and standardisation of statistical production, and the introduction of risk analysis, etc.

1.1.35 The strengthening of quality work is perhaps best manifested through the establishment of a separate **Department of Management Support** (staff unit) which was given the responsibility of developing and supporting the work on quality across all statistical fields. Systems that have been adopted and put into use include the coordination of samples, checklists for data collections (including registers), projects linked to micro data and metadata and quality indicators, and development of systems for user management.

1.1.36 Dealing with risk implies thinking along two dimensions. First, the **probability** of some particular events to occur, for example, a computer breaking down or a staff member being ill. Secondly, the **consequence** of a particular event taking place, for example, when the NA tables are not placed on the web site at the announced date, or incorrect NA data are published. A risk analysis on the NA thus will have as its starting point a description of the processes involved in producing and publishing the NA. Then, we must identify **risk factors** connected with each sub activity, ranking them according to both probability of some incidents to happen and the severity of the corresponding consequences.

1.1.37 The NA production and publishing process can be broken down into a set of sub activities shown in the following table:

The production of the NA – short- and long-term processes/activities.

<i>Time horizon</i>	<i>Process/activity</i>				
Short term	Production of source statistics	Transmission and translation of source data	Operation of NA compilation systems	Control and approval of NA data	Publishing and reporting
Long term	Development of source statistics	Designing the NA model and methodology	Constructing NA technical (IT) systems	Building analytical capacity	Constructing dissemination platform

¹ Sæbø, Hans Viggo (2009): *Quality and standardisation of processes*. Paper presented at ISI 2009. Published on: <http://www.statssa.gov.za/isi2009/ScientificProgramme/IPMS/0886.pdf>

1.1.38 The shaded areas represent processes and activities controlled by the Division for national accounts within Statistics Norway, while the non-shaded areas represent activities outside the direct control of the NA division. When risk factors are identified, it is of utmost importance that the ownership to the corresponding process or activity is identified. Otherwise, the responsibility for taking the correct measures to handle the risk cannot be clearly identified.

1.1.39 It must be noted however that the NA production or compilation process does not follow a strict chronologic order as seemly indicated by the above table. Many activities are interwoven and take place simultaneously. Also, to some degree the compilation of the NA is an iterative process, meaning that it may be necessary to repeat earlier steps. It is also important to keep in mind that each step includes various degrees of both methodological and technical aspects. For example, transmission and translation of source data depend both on pure technical solutions in the transmission into the NA model, and on decisions and choices of a more theoretical and methodological nature in translating source data into the NA definitions and concepts.

1.1.40 In addition to the identification of various steps or processes in the production of the NA, risk analysis can be related to the various NA products, i.e., quarterly NA, annual NA, institutional sector accounts, BoP, satellite accounts. Most probably however, many of the same risk factors will be identified across the different products. In the following, examples of risk factors related to the NA work are given. We start from the left-hand side of the table above:

i. Production of source statistics

From a short-term perspective of the current compilation of the NA, there is a risk that source **data are not supplied** from the statistics divisions within the agreed time frame. Whatever the reason, this will be outside the direct control of the Division of national accounts. The utmost consequence will be a delay, or even worse, a failure in the publishing and international reporting of the NA.

ii. Transmission and translation of source data

In the current compilation of the NA, there is often the risk that source data are not received in a correct format or structure. The reason may be that changes to the source data in terms of structure or coding have been made and that Division of national accounts has not been informed about or not apprehended the changes. The consequence may be for the best part a delay in the compilation process, or more seriously, source data are not correctly translated, which subsequently affects the NA results.

1.1.41 As an example of a more long-term risk factor, we can point to the **design of the operational NA model** itself. The operational model can be said to be an approximation of the theoretical NA model as outlined in the SNA or ESA. There will always be a risk that some theoretical concepts, definitions or **accounting rules have been misunderstood** and thus constituting the source of miscalculation in the operational model, which in turn results in the NA figures not in accordance with the definitions of international recommendations. Even if the operational model is correctly formulated, there exists a risk that **source data are misunderstood**, thus distorting the translation into the NA concepts, and ultimately leading to incorrect NA figures.

iii. Operation of the NA compilation system

The current operation of the NA compilation system comprises many different activities. Some of them are

- correcting and adjusting initial input data;
- making estimations with basis in source data for detailed industries or other parts of the economy;
- balancing the detailed supply and use tables;
- conducting consistency checks along various dimensions on institutional sector accounts; and
- deriving aggregates and balancing items of the NA.

1.1.42 Given a correctly defined NA operational model, the most crucial risk factor is the possibility of **incorrect estimations of the NA input figures**. This is an apparent risk as long as the detailed estimations are based on the input figures for the various parts of the economy, for example, the estimation of the production account for each detailed industry is carried out by different responsible persons using individual algorithms for each industry formulated locally on personal computers.

iv. Control and approval of the NA data

It is the responsibility of the NA management to control and finally approve the NA data before publication. How can it be assured that the **correct decisions** are taken in the approval process? There are many examples of the NA figures being changed in the last minute through a final management control. The challenge is to conduct such a control in a systematic and documented manner.

v. Publishing and reporting

What can go wrong in presenting the final NA data on the web site of Statistics Norway according to the planned time schedule? The final step in placing the NA data on the web site of Statistics Norway is the responsibility of the Division for Editing and Publishing within the Department of Communications. They are responsible for the lay out and the actual placing of the press releases and tables on the web site. The text and data or tables are transferred from the Division of national accounts to the Division for Editing and Publishing according to a fixed layout and a fixed timetable. It has happened that a **wrong set of tables** have been transferred to and placed on the web site.

1.1.43 Before discussing measures taken by Statistics Norway in general, and by the Division of national accounts in particular, to meet the risk factors given as examples above, an important final question to reflect upon is whether some risks are absolutely non-acceptable? Here several issues can be mentioned, all falling within a broader concept of the reputation of Statistics Norway and ultimately **the reputation of the statistics itself**: confidentiality, objectivity and independency, equality in serving customers etc. These are issues however, not confined only to the subject of the NA, but are just as relevant for the statistical institution (Statistics Norway) as a whole, and on which the consensus probably is that Statistics Norway in these areas should act with **absolute risk aversion**. The following paragraphs present various measures that have been taken to handle the different risks in producing and publishing the NA.

1.1.44 The risk of failure in supplying source data within agreed time schedule can be tackled to some extent with **services delivery agreements** between the statistical divisions and the Division for national accounts. An example of such an agreement is given below, using 2011 as an example. However, such an agreement is still valid at present at Statistics Norway.

FORMAL SERVICE AGREEMENT

Delivery of structural business statistics (SBS) to the national accounts

This formal service agreement specifies the guidelines for cooperation and delivery of structural business statistics data internally in Statistics Norway.

The divisions delivering the data:

- Division 1 for Structural Business Statistics
- Division 2 for Structural Business Statistics
- Division 3 for Structural Business Statistics
- Division 4 for Structural Business Statistics

The division receiving the data:

- Division of National Accounts

1. Introduction and background

The main objective with this agreement is to create a predictable and reliable framework for the divisions involved in the data delivery process. This agreement refers to the structural business statistics that are regulated in Regulation (EC) No 295/2008 of the European Parliament and the Council.

The following items 2-6 and the appendixes, defines the data content, methodology, timetable for delivery, quality control and documentation requirements, as well as an outline for communication and meetings.

The agreement is valid for the year 2011 but is also normative for subsequent years.

2. Contents

Guidelines for the data delivery of structural business statistics for the year 2011:

- a) The main delivery should consist of two data sets:
 - Aggregated by industry and distributed by counties, excluding ancillary/subsidiary units.
 - Ancillary/subsidiary units aggregated by industry and distributed by counties.
- b) The data sets are to be delivered on a 5-digit NACE level (aggregated by units) and as a SAS data set.
- c) Variables, aggregation level, names of the data sets, as well as where the data sets should be stored for access, are defined in the appendixes.
- d) Two preliminary versions should be made available before the main delivery. The first preliminary version is needed to perform a technical test of the system that is set up at the Division of National Accounts to analyse structural business statistics. The second, which is delivered close to the main delivery date, is used to allow the Division of National Accounts to analyse the figures and report possible errors and inconsistencies.

- e) The final delivery should be handed over with documentation. This is specified under item 5.
- f) Any additional contents should be stated on a separate line.

3. Date of delivery

The deadline for delivering the final data sets with documentation to the Division of National Accounts is the 16th of May 2013. The first preliminary data set is to be delivered within the 15th of March 2013 and the second preliminary data set within May 3rd, 2013 (as described under item 2 d)). If any errors or inconsistencies are found by the Division of National Accounts, these are to be reported to the delivering division before the 10th of May 2013.

4. Quality checks

The divisions delivering the data should perform quality checks of the data. A central feature is that the data should be given an economic interpretation. Relevant checks are listed below, however, it is not complete and using expert assessment is recommended. Adjustments may be made for subsequent years.

- a) Logical tests to ensure the aggregation is correct, e.g., the sum of the values of each unit in an enterprise equals the value reported for the enterprise.
- b) Ensure production and intermediate consumption figures are non-negative.
- c) Negative value added at industry level should be assessed and given a reasonable economic interpretation.
- d) Compensation of employees should be comparable to the corresponding figures in the previous year.
- e) Each division should make sure the growth rates of relevant variables for units at 5-digit NACE level are reasonable and make economic sense.

5. Documentation

Together with the data, each division should provide documentation of the data and delivery process. Some aspects that should be covered are listed below.

- a) The documentation should give a general description of this year's data, stating irregularities and any challenges with the figures.
- b) There should be a note on changes in the population, e.g., if any large units have been placed in other industries, moved physical location (relevant for analysis at county level) etc.
- c) Information regarding any major corrections. This includes changes in methodology.

After the data sets are delivered, the Division of National Accounts will provide written feedback on the process and the data delivered, which will serve as a supplement to the meetings held with each division providing data (described under item 6). This feedback should cover areas where improvement is needed and also state what has been more or less successful.

6. Information dissemination and meetings

Good communication between the delivering divisions and the receiving division is necessary. Every division is to follow certain information requirements.

- The delivering division must inform the Division of National Accounts if there are any changes in the methodology when producing the data sets. This may involve changes in questionnaires, population of sample surveys or estimation techniques.
- The relevant delivering divisions must be informed if the Division of National Accounts detects errors/inconsistencies in the data sets.

Three meetings with the divisions involved should be organized:

- a) **September:** Start-up meeting to clarify any improvements that can be made for year t-1.
- b) **January:** Follow-up meeting after the annual national accounts for year t-3 are final. This meeting should focus on the experiences of the Division of National Accounts for the accounting year t-3, any inconsistencies between the different statistics and any deviations of the structural business statistics with corresponding short-term statistics (e.g., the structural business statistics for manufacturing versus the production index for manufacturing).
- c) **March:** Meeting before the process for year t-2 is over and the final delivery (of year t-2) is done.

The delivering divisions are responsible for organizing the meetings in September and March, while the Division of National Accounts will host the meeting in January.

In addition, any changes or plans for structural business statistics for future years are to be discussed with the Division of National Accounts to ensure all interests are protected.

Date

Signature of the Directors

1.1.45 However, without any sanctions in case of failure of keeping such agreements, it will probably be of little practical implications². Therefore, it has been argued that a more effective solution is to make an agreement between the statistical divisions, or rather between Statistics Norway as a whole and the **rest of the society**. This is done through the **Advance release calendar** which states both date and hour of release of all statistics from Statistics Norway. The Division for national accounts uses this calendar for the time of supply of input data when fixing its work plan for compiling the NA. Again, it is correct that exceeding the release dates stated in the Advance release calendar does not automatically incur any sanctions on Statistics Norway from the rest of society. It will however harm the general reputation of the institution, which in turn more likely will trigger off the right measures to be taken within the institution, just like those undertaken after the failure to fulfil an internal agreement between divisions.

1.1.46 To better understand the content of source data and to avoid misunderstanding regarding the structure and coding of source data files submitted to the Division of national accounts, **meetings** are held on a regular basis between the Division of national accounts and the statistics divisions. There will also be close contact on a more current or *ad hoc* basis. One important fact in this regard is that nearly one hundred per cent of all input data to the NA are supplied from within Statistics Norway. This facilitates free and open exchange of information between involved parties. In addition,

² In the early 1990s agreements were set up between the statistics divisions in Statistics Norway and all external government bodies supplying source data.

automatic controls have been set up to give warning on changes in the coding of many of the source data.

1.1.47 One of the more striking attributes of the national accounts is its ability to help detect inconsistencies in the statistical source material. This is achieved for example by balancing supply and use of detailed products. When major inconsistencies are discovered, specific **quality projects** involving both the Division of national accounts and the relevant statistical departments are initiated, seeking information on the reason for inconsistencies and practical measures to improve the situation. The last years have seen several such projects being carried out. One is within the fields of oil and gas, where one problem was balancing output with exports of petroleum products, and another has been the allocation of supply of oil rigs and structures against exports and domestic capital formation. Another project has dealt with institutional sector allocation of specific units owned by government. Here one problem has been the danger of double counting due to inconsistencies between the business register and the source information used to compile government sector accounts. A third example deals with inconsistencies in the treatment of subcontracting within construction and property development activities.

1.1.48 To control the risk of carrying out miscalculations of the NA figures, a project has been launched to **standardise** the estimations across industries. This policy is facilitated by the standardisation of the input data that has taken place over the last decade in terms of accounting-based structural business statistics (SBS) for almost all industries. A part of this standardisation process involves transforming estimation procedures from individual designed Excel routines to joint SAS routines. To reduce the risk of **miscalculations of input data** to the NA, the **standardisation** of such estimations across industries or other NA areas is needed.

1.1.49 The conclusive responsibility of the NA figures is of course with the director general of Statistics Norway, and indeed the director general is literally involved in analysing and finalising the NA data. Statistics Norway has a large research department doing quarterly projections and forecasts of the Norwegian economy based on the latest available NA data. Every quarter before the publication of quarterly NA, and once a year before publication of revised annual data, a meeting is held with the director general and representatives from the research department to discuss, analyse and making proposals for adjustments to the NA data. It must be mentioned that the participation of the director general at these meetings is in his/her capacity as an experienced economist, model builder and forecaster and not in his/her capacity as director general as such. The feedback from the research department in this meeting, and indeed also those given earlier in the process of making the NA data, are of great importance to the final assessment and approval of the NA data by the management of the Division of the NA.

1.1.50 The analysis and final approval of the NA data are done both in terms of consistency checks within the NA framework, using accounting identities in various directions, and in terms of **plausibility checks** based on the **management's collective knowledge** of the Norwegian economy and its business cycles. Examples of subjects covered in plausibility checks are **productivity** in industries, the ratio between **theoretical value added tax** and paid value added tax and **rate of return on foreign investments**. Also, at an earlier stage in the compilation process, meetings are held with the various statistical divisions to get their comments and feedback on the results of the quarterly NA data. Detailed minutes are made and circulated from these meetings.

1.1.51 What potential risk factors exist to damage the management control and approval of the NA data? Most apparently would be the **lack of analytical capacity** within the fields of national accounting and business cycle analysis among the management personnel on the various levels. This must be regarded as a more long-term risk factor to be addressed through the active recruitment and education policy of Statistics Norway in general and for the Division of National Accounts and research Department in particular. The responsibility of the **final approval of the NA data** must be

clearly identified, and a system for retrospective insight into the decisions made at this stage should be easily available. Minutes from the approval meeting will serve this need.

1.1.52 It is the responsibility of the management of the NA to make sure that correct tables and data are transferred for final publication and dissemination. A check point should be established to secure that the **correct set of tables** are transferred from the Division of National Accounts to the Division for Editing and Publishing. Such a control must be designed by the two involved parties in cooperation. Likewise, a set of controls should be constructed to check the data reported to international organisations. Here the automatic controls on incoming data established by Eurostat could serve as a standard. From a more long-term perspective, a risk of failure in publishing data may occur when major changes are done to the publishing and reporting platform. Therefore, it is of vital importance that the actual change over to a new platform should not be effectuated until the new system is tested in full scale.

1.1.53 Over the last decades, Statistics Norway has been subject to several **reviews or assessments from external bodies**. In 2002 an IMF mission³ (ROSK) undertook an evaluation of national accounts, balance of payments and other vital short-term statistics. Under the umbrella of the European Statistics Code Practice, a peer review mission⁴ to Statistics Norway took place in 2014. This assessment covered in principle all activities and all aspects of Statistics Norway. Finally, it can be mentioned that the Eurostat GNI missions to Statistics Norway took place in 2009-2010, as part of the European Commission's supervision of the estimation of Gross National Income in all member states⁵. All these assessments, covering different part of the total statistical products, gave rather favourable reviews.

1.1.54 When it comes to initiatives on **internal audits**, the following elements can be mentioned. In 2009 Statistics Norway appointed a director for internal audit in its effort to ensure that work on quality improvements is in accordance with plans and objectives for all parts of the institution. The mandate for this position states that the director for internal audit twice a year should submit a report to the director general on the ongoing work in this field, see Statistisk sentralbyrå (2009). An important component in the new initiative within quality improvements is the introduction of risk analysis at the institutional level⁶. As an integral part of the Work plan for 2012, Statistics Norway in 2012 published a risk assessment covering eight different fields, of which five are within the production of statistics.

1.1.55 In 2008 a quality review, based on Eurostat's **self-evaluation form (DESAP)**, resulted in proposals for changes that have already been implemented or are about to be implemented. Finally, it could be mentioned that as far back as the 1990s **statistical guides** were introduced, in which selected staff members with some experiences are further educated in the skills of guiding development projects in the various statistical fields. This has contributed to the improvement of both the efficiency in and documentation of development projects in Statistics Norway.

1.1.56 Producing and publishing the NA statistics implies taking risks, so does developing and improving the statistics. The challenge is how to control the risk factors. This chapter has described the organisational arrangements and practical routines to be seen as part of the supervisory and control system of the Norwegian national accounts. It gives a bird's eye view of the current situation and gives also some hints about in which areas improvements should be made. This indicates that the systems will be further developed in the years to come, bearing in mind that the decision on improving or

³ See IMF (2002): Report from ROSC Mission to Norway 2002.

⁴ See Eurostat (2015): Peer review on the implantation of the European Statistics Code of Practice. Country visited: Norway.

⁵ Norway is covered on basis of being a member of the Economic Area Agreement.

⁶ See Statistics Norway (2012): Virksomhetsplan 2012 (Activity plan 2012) – Risikovurderinger (Risk analysis).

building new elements should be taken on the basis of a **cost-benefit** analysis, taking into account the limited resources available to the NA compilation activities.

1.1.57 An example of risk analysis of Quarterly National Accounts is given in the following. Though using the year of 2009 as an example, the purpose is just to show that similar risk analyses are constantly undertaken within and beyond National Accounts division at Statistics Norway.

Ambition: Maintenance or improvement of the quality on the current QNA

Risk	Rank	Measures
<p>1 Input data</p> <ul style="list-style-type: none"> • Risk of deterioration of quality on industry based short term statistics based on NACE 2002 (as from 2009 new units will not be given old industry code – the problem will increase in 2010 and 2011) • Risk connected to the ability and capacity of the statistics divisions to supply source data according to old NACE (2002) 	<p>Critical</p>	<ul style="list-style-type: none"> • Cooperation between the NA division and the statistics divisions to uncover problematic areas • The statistics divisions must be supplied with sufficient resources to be able to decode new units from NACE 2007 to NACE 2002 • The statistics divisions must give priority to the NACE 2002 coding even if this implies double work
<p>2 Resources and competence</p> <ul style="list-style-type: none"> • 20 per cent of the work staff have less than 1 year experience in national accounting • Heavy workload - due to the main revision and budgetary cutbacks - in particular on the most experienced staff members 	<p>High</p>	<ul style="list-style-type: none"> • Standardisation of QNA-applications (already in place) • Introduction programme and training course for all new staff members • Continuous monitoring of the workload on particularly the most experienced staff members • All projects and activities not connected to the running production and publication system or the 2011 main revision kept to a minimum
<p>3 IT-systems</p> <ul style="list-style-type: none"> • Risk of breakdown of IT-systems • QNA IT-system dependent on base year data from annual NA – centralisation of IT resources gives rise to new challenges 	<p>Critical</p>	<ul style="list-style-type: none"> • Knowledge of QNA applications (TROLL/FAME) and competence related to those systems only within the NA division • Vulnerability reduced through back-up of two persons (FAME) • Cooperation with research department on FAME • Clarify division 740's (IT support) role and responsibility related to the current operations and development of NA IT-systems (including BoP)

Risk chart for quarterly NA

Probability	Very high					
	High					1
	Moderate			2		
	Low					3
	Very low					
		Insignificant	Small	Moderate	Serious	Very serious
Consequence						

Conclusion

Three risk factors related to the quality on the current **running quarterly national accounts** were detected.

1) Risk no. 1 is labelled with high probability due to the resource situation and work pressure in the statistical departments in general and based on the fact that no fixed plan has been submitted from their part on how to reclassify new units back to NACE 2002. Manufacturing statistics is here an exception. The consequence of low quality on the reclassified statistics is regarded as very serious for the QNA.

2) Risk no. 2 is labelled with moderate probability. The NA division has many new staff members, and it is important to keep both those new and the more experienced staff. The consequence of high turn-over is considered as moderate.

3) The probability of a break-down of the QNA IT systems is regarded as low. The consequence of such an event is however regarded as very serious.

1.1.58 Statistics Norway's risk assessments are referred to in the following box, using 2012 as an example. In fact, similar risk assessments have been carried out at Statistics Norway over the years. For instance, an overall risk assessment in 2021 aims to identify conditions and events that, in the course of the coming years, can negatively affect goal achievement. In addition to the risk of not reaching objectives, risks have been also assessed related to information security and fraud, as well as for the working environment and the competence situation. Risks and measures will be followed up in the internal management in a propiate way.

Risk assessments at an overarching level are presented in a separate publication, see

http://www.ssb.no/en/omssb/om-oss/vaar-virksomhet/planer-og-meldinger/_attachment/122885?_ts=13f390bd460

Risk assessment areas with critical success factors have been prepared for the areas listed below. For statistics production as a whole, the picture is generally similar to last year. The risk in relation to levels of competency is assessed to be lower than for 2008. There is a risk linked to individual IT systems which Statistics Norway took over as part of the statistics from Norges Bank.

The risk assessments are performed with an implementation date of 1 January 2012 and onwards.

Overview of risks associated with the areas that are considered in the report:

1 Statistics production

Risk of inadequate capacity with regard to the necessary expertise and risk of breakdown in IT systems based on software for which Statistics Norway only has limited expertise.

2 IT

Risk of inadequate expertise, of undocumented old systems requiring a disproportionate share of resources, of unauthorized access to solutions, interruptions and downtime in excess of defined limits.

3 Financial management and purchasing

Risk of incorrect and poor solutions in Statistics Norway due to inadequate capacity in the Norwegian Government Agency for Financial Management (DFØ).

4 Security

Risk of inadequate information security and data security, and lack of security expertise.

5 Key projects and examples of statistics

5.1 New ssb.no

Risk associated with establishing a new technical infrastructure, low performance in the developed solution and insufficient integration of StatBank in the new ssb.no.

5.2 Population and housing census 2011

Risk that we do not achieve consistent household and dwelling data of sufficient quality.

5.3 Joint data receipt

Risk that the adaptations in ISEE will not be finished in time, risk of inadequate access to resources, of inadequate coordination in support projects, not enough time for testing, insufficient integration with Altinn and that the project does not achieve the development objectives in time.

5.4 *Securities statistics*

Risk of stoppage of old systems and inadequate data input.

5.5. *Data input system for banks and finance enterprises*

Risk associated with the system using software in which Statistics Norway does not have expertise, risk that the system cannot handle changes in Statistics Norway's IT infrastructure and of problems in the systems in the event of changes in reporting.

5.6 *International financial statistics*

Risk associated with the system using software in which Statistics Norway has inadequate IT and specialist expertise, and of insufficient quality of the international population.

1.2 The revisions policy and the timetable for revising and finalising the estimates

Timetable for revisions

1.2.1 National accounts are compiled in **different versions**. There are versions according to present status - **final or provisional** - detailed or less detailed, adjusted or unadjusted. Annual aggregated accounts are normally compiled in three consecutive provisional versions and a final one, and occasionally main revisions are undertaken later. Following the establishing of modern national accounts some 60 years ago, there have been eight **main revisions** of national accounts in Norway, with revised estimates initially published in 1962, 1973, 1995, 2002, 2006, 2011, 2014, and 2019.

1.2.2 Referring to **versions compiled**, including the **periodicity**, the Norwegian situation in 2021 is indicated in the box below. Time lag in number of months or days is indicated. In 2021, the final figures (Main aggregates) for 2019 and quarterly data to Q3 2021 were published on November 19th. The sector accounts and BoP were published on December 1st.

Versions compiled. Time lag in number of months

Aggregated annual accounts	
First provisional annual aggregated version (monthly/quarterly-based)	+ 1 1/3
Second provisional annual aggregated version (monthly/quarterly-based)	+ 4 1/3
Third provisional annual aggregated version (monthly/quarterly-based)	+ 10 1/3
Final annual detailed version	+ 22 1/2
Aggregated quarterly accounts	
Provisional first version	+ 1 1/3
Final adjusted version	+ 22 1/2 after end of year (adjustment once a year)
Supply and use tables	
Provisional version	Simplified version in quarterly accounts

Final detailed version	like final aggregated annual accounts
Input-output tables	
Final detailed version	like final aggregated annual accounts
Institutional sector accounts	
Provisional aggregated quarterly version	+ 2
Provisional aggregated annual version	+ 2
Final annual detailed version	+ 23
Regional accounts	
Final detailed version	like final aggregated annual accounts
Labor accounts	
Quarterly versions	like aggregated quarterly accounts
First provisional annual version	like provisional aggregated annual accounts
Second provisional annual version	like provisional aggregated annual accounts
Third provisional annual version	like provisional aggregated annual accounts
Final annual version	like final aggregated annual accounts
Balance of payments	
First quarterly version	+ 2
Final adjusted quarterly version	+ 23 after end of year
First provisional annual version	+ 2
Second provisional annual version	+ 5
Third provisional annual version	+ 11
Final annual version	+ 23
Satellite accounts	
Tourism, System of Health Accounts, Satellite for Non-profit institutions, NAMEA	Ad hoc versions

1.2.3 In summary, it is seen that **integrated annual accounts** are compiled in **four successive versions**, of which the first three are provisional and the fourth is a final version. There is a clear distinction between the first three versions - which are based on accumulated quarterly compiled estimates - and the last one which regularly is based on annual data sources. The third version, like the first two, is also using the quarterly accounting system as a frame but is incorporating some annual data sources. This kind of cycle of producing and publishing annual national accounts estimates has been established a long time ago in Norway. Alterations have been made in reducing time lags of the third and fourth versions to meet ESA reporting obligations timelier, while the time lags of the first and second versions now meet regular quarterly dissemination cycle well.

Revisions policy

1.2.4 In the past, Statistics Norway had **no specific policy on main revisions**. In 1995, more than 20 years had elapsed since Statistics Norway undertook its second main revision in 1973 when SNA68 was implemented. **The 1995 revision - implementing ESA95 and SNA93** - was the third main revision of national accounts in Norway. This main revision might be regarded as a more comprehensive one than the previous ones, because new sources and estimation methods - after having been delayed for a number of years - eventually were implemented directly into the revised accounts.

1.2.5 In 2002, Statistics Norway undertook another main revision - the **fourth main revision** in order - this time without any major definitional changes to the system. Then again, in 2006, the **fifth main revision** was published - when the allocation of FISIM was introduced for the first time. The **2011 main revision** introduced the new industry classification NACE rev.2, while the seventh **main revision in 2014** introduced the new international manuals, i.e., ESA 2010, 2008 SNA and BPM6. In 2019, a periodic revision was undertaken with the purpose to incorporate new information into the NNA. The incorporation of a new data source for salaries and employment (*A-ordningen* in Norwegian) is the most important single cause of the revision. Transfer of some specific units from market producers to government sector, as well as a change in how some existing sources are used, have caused other corrections.

1.2.6 Looking back at the last seven main revisions in the Norwegian National Accounts, **GDP** was substantially affected by approximately **10 per cent** in 1973 and 1995 main revisions, while it was by up between 1 – 2 per cent for the **2002, 2006, 2011, and 2014 main revisions**. As for the latest 2019 revision, the revisions of GDP were not significant for the years 2015 and backwards. However, for 2016 and 2017, GDP was revised down 0.7 and 0.3 per cent, respectively. While the SNA68 revision decreased GDP level by 10 percent, of which 9 per cent came from definitional changes, the 1995 revision increased again the level of GDP by 10 per cent, but this time 9 per cent was due to non-definitional changes. This very fact is a clear warning that a **period of 20 years** is a **much too long** interval between revisions of this kind.

1.2.7 From 2002, main revisions in Norway have been carried out **every 5 years**. This is also the aim for the future. The frequency and timing for the recent main revisions are harmonised with most European countries, following the recommendations from Eurostat. Statistics Norway welcomes in principle a common timing of main revisions, although there are practical considerations that may prevent it from taking place. There have also been examples of more limited revisions of some of the time series between the main revisions. In 2021, a revision of time series in the labour accounts (hours worked) was made, without affecting GDP. Next year, there is a plan for a limited revision of the time series, related to implementing new source data in connection to processing and merchanting.

1.2.8 **Another issue** related to revision policy is the **threshold value** for determining whether current revisions should be made (provisional to final) or not (i.e., by leaving amendments for a main revision later). In Norway, a pragmatic approach has been followed, it may be right to say that individual cases causing revisions above approximately 0.5 - 1 billion NOK should be left for future main revisions. This decision also depends on which items are in concern and whether GDP is affected or not, etc.

1.2.9 **Backward revisions** are also part of the revision policy issue. This is a very important issue as well, particularly so in Statistics Norway as the Research Department emphasises the strong need for long time series in order to undertake economic analyses. The policy followed in Statistics Norway may be summarised in three principles:

- | | |
|-------|---|
| (i) | Backward revisions made for a limited number of years , providing overlap years |
| (ii) | Backward revisions made for a period of typically 15 - 25 years or so |
| (iii) | Backward revisions made in 2 or more steps due to resource requirements. |

1.2.10 In the implementation of ESA95 that had its first estimates released in the **1995 main revision**, the backward revision was completed late 2000. At that juncture, revised ESA95 estimates

were compiled for the period **back to 1970**. In other words, the first revised estimates were made for years starting 1988 in 1995, while almost 20 years were aligned backwards five years later. The work was done in a sequence, i.e., year by year, and in a detailed way. **Institutional sector accounts** of the ESA95 implementation in the 1990s were revised **backwards to 1978**, i.e., the first step was taken, while the second step was not.

1.2.11 With respect to the **2002 main revision** and backward estimations, revised final national accounts figures were made for the years 1991-1999, while new preliminary figures were made for 2000 and 2001. The 2002 revision had larger effect for the years after 1995 due to the incorporation of structural business statistics being adapted for the national accounts, while the effect for years from 1991 to 1994 was rather small. Time series further back, i.e., before 1991 were not revised.

1.2.12 At the other end of the scale, in **the 2006, 2011, 2014 and 2019 main revisions** all years back to 1970 were published simultaneously, and even including revised quarterly figures.

1.3 Outline of the production approach

Classifications

1.3.1 **Main classification schemes** used in the NNA for the estimation of GDP according to the **production approach** are the activity classification based on NACE Rev.2 and the product classification based on CPA. **Number of activities** specified are about 130 (altogether around 150 when adding market and non-market activities), and **number of products** are about 900 NNA-products, of which 450 are goods, 350 are services, while the remaining products primarily are there for technical or other reasons (partly goods and partly services). Thus, in the NNA there is a 55 - 45 distribution between goods and services as characteristic products of the activities of national accounts are concerned. In addition, there is now a 50 - 50 distribution between goods-producing and services-producing activities.

1.3.2 The breakdown by categories of production - or types of producers, i.e., market, own final use, and other non-market - is handled through the coding system (prefixes), which gives **separate categories** for **market production**, **production for own final use**, and three categories for **other non-market production**, i.e., productions in central government, local government and NPIs serving households, respectively.

Main sources of data

1.3.3 In general, and typically, a **mixture of administrative records and statistical surveys** is used as sources for the NNA. The relative importance of the two kinds of sources can be found from the detailed description by NACE industries below. During the last couple of decades there has been increased focus on exploiting **administrative data** for statistical purposes. The continued efforts on improving the business register are clear evidence in that respect. Another substantial development has been the use of **structural business statistics (SBS)** in the national accounts. In the 2002 main revision, routines were set up for converting and redefining individual variables in the SBS based on the national accounts industry divisions and concepts. Statistics Norway publishes annual structural statistics within 15 months after the end of the statistical year in most areas from NACE B through S.

Register data

1.3.4 The use of register data in the national accounts often faces challenges. Statistics Norway's **Business Register - the Central Register of Establishments and Enterprises** - is an important instrument of the Norwegian statistical system. It comprises in principle all production units in Norway.

1.3.5 In 2009, Statistics Norway introduced **NACE Rev.2** for classifying production units into producing industries. Prior to that, NACE rev1.1 was used. Statistics Norway has established a national version of industry classification, i.e., SN2007, which is based on NACE rev.2, but contains a more detailed level (fifth number).

1.3.6 The statistical units employed by Statistics Norway in its Business Register form the basis for the compilation and production of economic statistics. **The units** are legal units, enterprises, kind-of-activity units (KAUs) and local kind-of-activity units (L KAUs). Ancillary corporations are also identified with double sort of coding, one for the activity and the mother company, another for the actual activity of the ancillary company. Furthermore, all concern relations of the enterprises are recorded in the Register, including those with rest-of-the world.

1.3.7 The statistical information contained in the Business Register relevant for the NNA was essentially confined to **employment and turnover data**.

1.3.8 Over the last couple of decades, more emphasis has been made on utilising **accounting data**. With the **structural business statistics** - a main source for the NNA compilation according to the production approach - use is made of a complete set of statements from large enterprises to the tax authorities. For the other enterprises, sales figures and other essential accounting data have been obtained from annual accounts in the **Norwegian Register of Company Accounts in Brønnøysund**.

Main sources by industry

1.3.9 **Main sources used** by the various NACE sections applied for the production approach in **the NNA annual accounts** have been summarised below.

Industries	Main sources used
NACE A	Aggregate account of agriculture compiled by the Budgeting Committee for Agriculture. Aggregate account of forestry is less comprehensive, compiled by Statistics Norway. Catch statistics from the Directorate of Fisheries and register-based Annual Census data of fish farming are used for output, while sources for intermediate consumption are annual Cost surveys of fishing boats and Cost surveys of fish farming .
NACE B	Oil and gas activity statistics are census-type sources collected from the operators involved at fields in production, terminals and pipeline activities, using different statistical forms. Manufacturing statistics (SBS-based) cover other mining and quarrying.
NACE C	Manufacturing statistics have been available since the late 1920s, altered considerably in 1949 and 1972 and with the incorporation of Structural business statistics (SBS) from 1996.
NACE D	Electricity statistics , which is production statistics like manufacturing statistics.
NACE E	Local government accounts and Structural Business Statistics (SBS) .
NACE F	Construction statistics - providing annual data - play a direct role in compiling this industry, and becoming SBS-based source from 1996.
NACE G	Annual wholesale and retail statistics (SBS-based) are now used. Also used are Sample surveys on trade margins (periodic) .
NACE H	Structural business accounts (SBS) . Oil and gas activity statistics (pipeline transport) . Business Accounts SAS .
NACE I	Structural business statistics (SBS) .
NACE J	Structural business statistics (SBS) .
NACE K	Credit market statistics cover accounts of all financial enterprises , for banks, insurance companies and other financial institutions. Interest Statistics (FISIM) .
NACE L	Annual structural business statistics (SBS) . Housing statistics of various kinds, also Household budget surveys (HBS) and Quarterly surveys on actual rents for dwelling services.
NACE M	Structural Business Statistics (SBS) . Central government accounts (e.g. R&D).
NACE N	Structural business statistics (SBS) .
NACE O	Central government accounts and Local government accounts and the reporting system KOSTRA .
NACE P	Central government accounts and Local government accounts . Accounting statistics for NPISHs .
NACE Q	Central government accounts and Local government accounts . Accounting statistics health institutions . Social statistics .
NACE R	Central government accounts and Local government accounts . Business register data . Cultural statistics .
NACE S	Central government accounts and Local government accounts . Structural Business Statistics (SBS) . Statistics membership organisations . Data from trade unions .
NACE T	Data from Register of jobs, remuneration, social benefits and taxes paid (A-melding in Norwegian) .

Note: Data from central and local government accounts are first processed by Division of Public Finance, and then used as input for compiling the NNA by Division of National Accounts at Statistics Norway.

Reasons for main choices between data sources

1.3.10 Statistics Norway has a long tradition and experience utilising relevant and detailed **production data with the local KAU** (the establishment) as the statistical unit for compiling GDP estimates according to the production approach. Experience through several decades with this kind of data together with the Business Register - **the Central Register of Establishments and Enterprises** - have provided good reasons for the data sources being selected. The Register definitely has an important role in the identification of population as well as in securing data exhaustiveness.

1.3.11 Despite the traditional use of data for providing basic production statistics for the production approach, a new development has occurred in the last 25 years in terms of the **Structural business statistics**. Unlike the production statistics based on data from local KAUs, these new data are **enterprise-based, and it is in fact based on legal units**. More detailed data on enterprises than previous cases have been obtained and now focus is on **accounting data**. At the same time, it has been important for Statistics Norway to **retain the local KAU dimension** in the basic data, and this is achieved by using a supplementary form to collect additional information about the LKAU within the enterprises.

1.3.12 **Structural business statistics** were introduced in the NNA in the 2002 main revision. First, they were introduced in manufacturing (and mining and quarrying), the use of this source was then extended to other industries as well - to construction, and in particular, to strengthen the NNA estimates in the **sphere of services**. This was one of the main aims of the 2002 main revision.

Independence from other approaches

1.3.13 It has been described elsewhere in the Inventory that the NNA compilation is carried out in the framework of **annual supply and use tables**, by applying all three approaches to measuring GDP and using relatively **detailed commodity flows**.

Valuation

1.3.14 Valuation is **particularly relevant for transactions in goods and services**, but also to the general aspect of **time of recording**. In general, the accruals basis principle of recording is applied in the NNA. Thus, taxes on production and subsidies are **basically recorded in accruals values** and not in cash values as recorded in the government accounts.

1.3.15 **Output** is valued at **basic prices** in the cases of market production and production for own final use (i.e., basic prices for similar products in market production), while non-market output (per convention) is recorded by total costs of production due to lack of prices.

1.3.16 Output at basic prices has implications such as:

- Valued added of an industry is "valued" at basic prices (calculated as output at basic prices less intermediate consumption at purchasers' prices)
- Taxes on products (including VAT) and subsidies on products are not distributed by industry
- Total value added of the industries is also "valued" at basic prices
- GDP is "valued" at market prices, which means that taxes on products less subsidies on products are added to total value added of the industries at basic prices
- Accruals VAT (i.e., VAT on output less deductible VAT on intermediate consumption and other uses) is among the taxes on products to be added to arrive at GDP
- Taxes and subsidies on production that are not recorded as taxes and subsidies on products (i.e., other taxes on production, other subsidies on production) are distributed by industry, and thus influencing the magnitudes of operating surplus, but not value added, of the industries.

Transition from private accounting data to national accounting concepts

1.3.17 The process of data capture through the questionnaire approach has been accompanied by **guidance on recording**. When statistical forms are sent to respondents (producers etc.), these forms are most often accompanied by quite detailed guidance on how to fill in the figures. The traditional way of approaching the respondents has been for them to adapt to the required NA concepts and definitions. With the tendency to explore the possibility for a wider use of administrative data in the NNA compilation, adapting to the NA standards is more likely to be made by Statistics Norway itself. There is, however, also a right for Statistics Norway through the Statistics Act to influence the administrative data set-up in a way that suits the statistical system.

1.3.18 The detailed descriptions in this inventory - **in the sub-sections on methods of estimation** - contain information on possible transitions from private accounting data to national accounts concepts. Descriptions in these sub-sections are made as explicit and illustrative as possible. The objective is of course to describe how the basic sources have been utilised for the NNA compilation in a transparent way.

The roles of direct and indirect estimation methods

1.3.19 A summary analysis on types of sources used shows that the estimation of output and intermediate consumption is based on **relevant statistics** that are **available on a current basis**. Around 7 per cent of output and intermediate consumption in 2019 were estimated from sources that are not normally currently available. The estimation of GDP was thus soundly based on relevant and currently available sources for about 93 per cent of its value. This share was in particular increased with the introduction of annual **SBS-based statistics** in the 2002 main revision.

1.3.20 Sources that are **not normally currently available** are almost exclusively found in production of services.

The roles of benchmarks and extrapolations

1.3.21 The role of benchmarks and extrapolations in the current NNA compilation according to the production approach is **quite limited**. As just mentioned, around 7 per cent of output is estimated from sources that are not normally currently available. In the Norwegian statistical system, economic statistics have been established with a high degree of regularity, on annual basis in most cases (Short-term statistics for quarterly national accounts and balance of payments are outside the scope in this respect). Typically, there has been no economic census since 1974, and not much use has been made from other censuses held every 10 years or so, like the population and housing census, and agricultural and fishery censuses. More recent censuses have been used, but they are not really providing essential additional information for national accounts estimation in general.

1.3.22 In one respect, **benchmark** has an important role to play, and that is when undertaking a **main revision**. It is usually both convenient and useful to establish revised levels for the NA estimates for a **benchmark year** in the first place, by selecting a year that is "normal" (i.e., avoiding year of extraordinary events), and in particular, with the best scope for possible use of sources available. Given the annual sources available, the role of **extrapolations** - in this respect and in general - is restricted to the main revision process only, and not to sources. It means that new levels obtained initially for the benchmark year are extrapolated to other years so that revised time series are being established, normally from the same quality of sources that have been introduced for the benchmark year.

The main approaches taken with respect to exhaustiveness

1.3.23 In 2019 **total adjustments made to ensure exhaustiveness from the production approach** added to NOK 24.2 billion, or **0.7 per cent of GDP** and GNI. What were recorded in that measure were identified adjustments to replace and make improvements to the ordinary utilisation of main sources available. One typical set of examples was to use side information that in certain cases was assumed to serve as a basis for compilation of output. This was regarded as adjustment to the ordinary supply-side information to ensure exhaustiveness.

1.3.24 Adjustments were highest in **construction, transport and storage, and accommodation and food serving services**. Adjustment for **own-account construction** was related in particular to existing dwellings (major improvements and the like), but also to own-account construction of new dwellings and on cottages, summer houses etc. In **agriculture** production, adjustment was done for own consumption in other households than farmers' households (fresh fruit in particular).

1.4 Outline of the income approach

Classifications

1.4.1 **Main classification schemes** used in the NNA for the estimation of GDP according to the **income approach** are again by **kind of activities** (NACE Rev.2), as well as by **categories** or **components**. In practice, they are cross-classified, i.e., each of the components is broken down by kind of activities or industries.

Main sources of data

1.4.2 In general, and typically, a **mixture of administrative records** and **statistical surveys** is used as sources for the NNA. Like for the production approach, the relative importance of the two kinds of sources is to be seen from the description by main components. The estimates of **compensation of employees** for non-government industries are compiled by use of the **Register of jobs, remuneration, social benefits and taxes paid** (*A-melding* in Norwegian) supplemented with statistics on central governments contribution to the pension scheme – *AFP-ordningen* – according to accounting statistics for the central government. The compilation of compensation of employees in central and local government are based on accounting statistics for the two sectors. The estimation of compensation of employees by industry is closely linked to the estimation of employment including hours worked. **Other taxes on production** and **other subsidies on production** are mostly estimated from the central government accounts, but local government accounts are also involved. **Mixed income** is estimated from the accounting statistics of self-employed. The remaining main components - **operating surplus** and **consumption of fixed capital** - are indirectly measured (residually calculated) and determined from the PIM approach, respectively. Despite residually estimated, **operating surplus** is being **evaluated**, thereby sometimes giving **repercussions** back on estimates of output and intermediate consumption and thus value added in industries involved.

1.4.3 **Main sources used** for the various main components of the income approach have been summarised below.

<i>Industries</i>	<i>Main sources used</i>
Wages and salaries	<i>A-melding</i> (Register of jobs, remuneration, social benefits and taxes paid).
Employers' social contributions	Employers' actual social contribution (all industries, including central and local government) are based on the <i>A-melding</i> . For imputed social contribution in non-government industries several sources are used for the compilations. The main sources are the <i>A-melding</i> , central government contribution to the <i>AFP-ordning</i> according to accounting statistics for the central government and statistics on sick-leaves published by Statistics Norway. For central and local government, the sources are the <i>A-melding</i> , Statistics on sick leaves and accounting statistics for central and local government.
Other taxes on production	Central government accounts (the fiscal accounts) and Other central government accounts (government funds etc.) are the main sources used. Local government accounts are used to estimate tax on real property and some concession taxes.
Other subsidies on production	Central government accounts (the fiscal accounts) and Other central government accounts (government funds etc.) are the main sources used. Local government accounts are used to estimate a limited number of subsidies, such as transport grants to scheduled transportation.
Mixed income	Gross mixed income is estimated from the accounting statistics of self-employed .
Consumption of fixed capital	PIM method is used.
Operating surplus	Balancing item.

Reasons for main choices between data sources

1.4.4 Statistics Norway has a long tradition and experience utilising relevant and detailed **production data**, which are based on **the LKAU** (the establishment) as the statistical unit for compiling GDP. The industry-based sources used for the production approach - such as the SBS-based statistics - provide useful data for **compensation of employees** as well, while these data sources are less suitable for **other taxes and subsidies on production**. In the latter case, **central and local government accounts** provide the proper basis for the NNA compilation. The estimation of compensation of employees by industry is closely linked to the estimation of employment and hours worked, made in the **common framework of the NNA and Labour Accounts**. The *A-melding*, which provides statistics on all jobs remunerated in wages and salaries, the jobs total remuneration in cash and in kind (including contribution to pension schemes), and which connects each job to an identified person and enterprise, was established in 2015 and is a natural choice for the central source in the Labour Accounts for the compilation of compensation of employees and for employment.

1.4.5 The residual nature of operating surplus has recently become less 'residual', as the **mixed income** part has been estimated directly from improved accounting data related to self-employed. Balancing item is therefore confined to operating surplus of the sectors outside households. Operating surplus of the household sector - owner-occupied dwelling services - is also compiled in a non-residual manner (primarily from other sources originated from output).

Independence from other approaches

1.4.6 It has been described elsewhere in the Inventory that the NNA compilation is carried out in the framework of **annual supply and use tables by** applying all three approaches to measuring GDP. From the point of view of integration and validating the outcome of the balancing item estimation procedure for operating surplus, work has been made on utilising the sector-based accounting data sources to provide a **direct expression** for operating surplus as well. With an improved source basis as described elsewhere in the Inventory, approaching a full integration in this respect between industry-based and sector-based approaches has improved with the introduction of the accounting-based NO as a joint source for both the establishment-based and the enterprise-based NA. Referring again to the UNSTAT scheme in section 1.1, this may lead to an **integrated accounting approach** as data check (3.2) rather than for data reconciliation (3.1).

Valuation

1.4.7 In this context, valuation is particularly relevant for **other taxes on production** and **other subsidies on production** in the sense of **time of recording**. In general, the accruals basis principle of recording is applied in the NNA. Taxes and subsidies on production thus are **basically** to be recorded **in accruals values** and not in cash values as recorded in the government accounts. Pragmatically however, in a number of cases cash values are resorted to when applying the government accounts as sources. In particular, this is typical for other taxes and subsidies on production. Accrual's basis is more commonly used for taxes and subsidies on products.

1.4.8 Valuation is also relevant in the case of **consumption of fixed capital** when applying the PIM method and making use of investment data and coherent price indices for investment for inflating constant-price figures in that respect.

Transition from private accounting data to national accounting concepts

1.4.9 This is an issue associated with the use of data reported to the *A-melding* for the compilation of compensation of employees, and the use of **accounting statistics of the self-employed** for compiling mixed income. The data to be reported to the *A-melding* according to the new law which followed the new reporting-system cover a variety of different contributions and benefits. The grouping or aggregation of the different types of contributions reported are done by the group in Statistics Norway responsible for producing the index for Labour costs. This index is also founded on ESA 2010 principles, hence the delimitation of the different contributions into components which are part of compensation of employees according to ESA 2010 are taken care of in the production of the data source.

The roles of direct and indirect estimation methods

1.4.10 **Direct methods** are mostly used, except that consumption of fixed capital is derived by using the PIM method, and that operating surplus is calculated as a residual. **Indirect estimation methods** are also used partly for compensation of employees, when indicators of wage rates and employment are combined to form wages and salaries estimates.

The roles of benchmarks and extrapolations

1.4.11 Like in the production approach, the role of benchmarks and extrapolations in the current NNA compilation is **quite limited** in the income approach also. The sources referred to are all annual sources, and sources for the indicator approach to estimating compensation of employees are available on quarterly basis (LFS data, wage statistics). As already mentioned, **benchmark and extrapolations** play an important role when undertaking a **main revision**, but they are restricted to this context only.

The main approaches taken with respect to exhaustiveness

1.4.12 With reference to the income approach, two issues related to exhaustiveness should be mentioned at this point. One is confined to **wages and salaries in kind (or income in kind)**; the other is known as the confrontation between **theoretical and actual VAT receipts**. **Wages and salaries in kind** were significantly extended in coverage when ESA95 was implemented in the 1995 revision. It includes *inter alia* services of company cars, reduced rates of interest, reduced price or free mobile phones, mobile phone subscription, wi-fi, training and training equipment, kindergarten, food and accommodation on business trips and reduced price on travelling. Wages and salaries in kind are in Norway in general considered as taxable income and are due to be reported to the *A-melding* and hence included in the estimates of wages and salaries in NNA.

1.4.13 Until the 2002 main revision, there was no explicit allowance for **tips**, thought to be not typical in Norway, in the national accounts. Studies in the restaurants industry led to the conclusion that tipping could not be very extensive. In the 2002 revision, some more investigation confirmed that no significant underestimation existed. In hotels and restaurants and in taxi transportation, however, output had been increased by 3 per cent to take tips into account.

1.4.14 The comparison of theoretical and actual VAT receipts gives a strong indication of the extent of exhaustiveness. A check between theoretical VAT calculated in the national accounts and actual VAT recorded in the government accounts can be referred to. Main results of this kind of check are a difference of 3.6 per cent on average for the period 2000 – 2012, and that of 3.5 per cent in 2019, when using time lag adjusted government accounts figures. The small and positive difference shows

that more activities are covered than evidenced by the taxation authority. Statistics Norway believes that the size of the difference is reasonably well in its context as checks to ensure exhaustiveness.

1.5 Outline of the expenditure approach

Classifications

1.5.1 The **main classification schemes** used in the NNA for the estimation of GDP according to the **expenditure approach** are the purpose-like classifications of COFOG, COICOP and COPNI used for final consumption expenditure of general government, households and NPISHs, respectively. Furthermore, they include the classifications of fixed assets and activities used for GFCF, and breakdowns on categories of inventories, and on exports and imports. In the 2002 main revision, the new international **COFOG** was implemented in the Norwegian national accounts, as well as in the government accounts. **COICOP** for household consumption expenditure is relatively detailed and structured at three different levels of aggregation. The new international COICOP was implemented in the national accounts in the 2002 main revision. The classification **by type of fixed assets** is also relatively detailed. GFCF is broken down by kind of activities, in fact to have full accordance with the activity classification in production. On the other hand, there are few **categories of inventories** specified; for changes in inventories, the main breakdown in the NNA is by products. Similarly, for **exports of goods and services** and **import of goods and services**, the main breakdown is by **products**. At an aggregated product level, exports and imports are also broken down by **partner country**.

Main sources of data

1.5.2 In general, and typically, a **mixture of administrative records and statistical surveys** is used as sources for the NNA. The relative importance of the two kinds of sources can be seen from the detailed description by main categories. Three groups of sources are utilised in the estimation of **household final consumption expenditure**; these are household consumer surveys (or household budget surveys, HBS), retail trade statistics, and the third group consisting of output figures, selected indicators, and the commodity flow method. The primary method is an interplay between these three source elements. It must be admitted however, that a decline in the response rate to, and thus the quality of the HBS in recent years, has made it more difficult over time to keep a uniform design of the method used in estimating households' final consumption expenditure. The HBS from 2012 is so far the last available source, however a new HBS survey is planned to be completed in 2022. Estimations of **NPISH final consumption expenditure** are indirectly estimated based on, to large extent and most often, government accounting data. The statistics **General government revenue and expenditure** from the Division of public finance are the source used for the calculation of central and local **government final consumption expenditure**. The statistics are based on the budgetary central government fiscal accounts and local government accounts, as well as other accounts for units included in the general governments according to statistical principles. Fees from households and/or other sectors are deducted from non-market output in this calculation, and expenditures on consumption of goods and services purchased from market producers and supplied directly to households are added. For **gross fixed capital formation**, the estimation is first directed at the use of industry-related sources, such as the SBS-based statistics, and the expenditure approach, while the commodity flow approach takes a substantive role in the next phases. The main approach to estimating **changes in inventories** is through balancing of supply and use for each NNA-product by using the commodity flow method. **Exports of goods** and **imports of goods** are based on external trade statistics, containing detailed specifications and distributed on detailed NNA products. **Exports of services** and **imports of services** are estimated based on the direct source of data collection for residents engaged in economic transactions with non-residents (so-called UT project).

1.5.3 Main sources used for the various categories of final use of the expenditure approach have been summarised in the box below.

<i>Categories of final use</i>	<i>Main sources used</i>
Household final consumption expenditure	
COICOP 01	Household budget surveys (periodic), Annual retail trade statistics, Consumer Price Index material, and Quantity information on beverages
COICOP 02	Annual retail trade statistics, Consumer Price Index material, and Quantity information on beverages and tobacco.
COICOP 03	Household budget surveys (periodic), Annual retail trade statistics, and Annual surveys of repair activities (SBS-based)
COICOP 04	Housing statistics of various kinds, including surveys of actual rents, Annual electricity statistics, and Annual energy statistics
COICOP 05	Household budget surveys (periodic), Annual retail trade statistics, and Annual surveys of repair activities (SBS-based)
COICOP 06	Household budget surveys (periodic), Annual retail trade statistics, Central government accounts (including National Insurance), Local government accounts, and Income sample surveys for private practitioners, dentists etc.
COICOP 07	Household budget surveys (periodic), Annual retail trade statistics, Statistics on new registrations of motor vehicles, Energy statistics, Consumer Price Index material
COICOP 08	Household budget surveys (periodic), Annual retail trade statistics
COICOP 09	Household budget surveys (periodic), Annual retail trade statistics, and Sources used for output of various NACE (partly SBS-based)
COICOP 10	Output statistics of NACE 85
COICOP 11	Household budget surveys (periodic), Output statistics, i.e., structural business statistics, and Accommodation statistics of guest-nights
COICOP 12	Household budget surveys (periodic), Annual retail trade statistics, Local government accounts, and Social statistics and health statistics
NPISH final consumption expenditure	Central government accounts and local government accounts are used as for output, while supplemented by household budget surveys in particular for deducting fees from households
Government final consumption expenditure	Central government accounts and local government accounts are used as for output, also for fees
Gross fixed capital formation	
NACE A	Aggregate account of agriculture, Forestry statistics and aggregate account of forestry and Manufacturing statistics (SBS) and Census data of fish farming – all annual
NACE B	Oil and gas activity statistics (quarterly) and Manufacturing statistics (SBS) – annual
NACE C	Manufacturing statistics (SBS) – annual
NACE D	Electricity statistics – annual
NACE E	Structural Business Statistics (SBS) and Local government accounts – both annual
NACE F	Construction statistics (SBS) - annual

NACE G	Wholesale and retail trade statistics (SBS), Buildings statistics, and Register of vehicles – all annual
NACE H	Accounting statistics (SBS), Accounting data of SAS, Oil and gas statistics – annual and quarterly
NACE I	Accounting statistics (SBS) – annual
NACE J	Accounting statistics (SBS) – annual
NACE K	Credit market statistics, accounting data for banks, insurance companies and other financial institutions – annual and quarterly
NACE L	Accounting statistics (SBS), Construction statistics, Building statistics, Index of building costs and price index of new dwellings, and Central and local government accounts – all annual
NACE M	Structural Business Statistics (SBS) – annual
NACE N	Structural Business Statistics (SBS) – annual
NACE O	Central government accounts and Local government accounts - annual
NACE P	Central government accounts and Local government accounts – annual
NACE Q	Central government accounts and Local government accounts - annual
NACE R	Structural Business Statistics, Central government accounts and Local government accounts – all annual
NACE S	Structural Business Statistics (SBS) – annual
NACE T	(not estimated)
Changes in inventories	(no reliable source, scattered information)
Exports of goods	External trade statistics – quarterly and annual
Exports of services	Sample survey (cf. UT project) from 2005, Maritime transport statistics, Oil and gas activity statistics and Tourist/travel statistics – quarterly and annual
Imports of goods	External trade statistics – quarterly and annual
Imports of services	Sample survey (cf. UT project) from 2005, Maritime transport statistics, Oil and gas activity statistics and Tourist/travel statistics – quarterly and annual

Reasons for main choices between data sources

1.5.4 Statistics Norway has a long tradition and experience utilising relevant and **detailed production data**, which are based on the **local KAU** (the establishment) as the statistical unit for compiling GDP. The industry-based sources used for the production approach - such as the SBS-based statistics - provide useful data for **gross fixed capital formation** as well, while these data sources so far have been **less suitable for changes in inventories**, and **exports and imports of services**. For exports and imports of services, **direct reporting of foreign transactions from resident enterprises** is used instead, and it is still useful in industries that are almost entirely export-oriented, e.g., oil and gas activity statistics and maritime transport statistics for ocean transport. For changes in inventories, several attempts have been made to explore direct data sources, and the research work will be continued. Basic choice until now has been to rely on detailed product balances rather than direct industry- or sector-based data that have been considered relatively uncertain in terms of quality.

1.5.5 **Household consumption expenditure** estimation is based on several main sources as described above. Before 1995 revision, retail trade statistics were basically chosen for the current estimations of consumption goods, while household budget surveys were limited in use to benchmark estimation in main revisions and to some extent for estimating consumption services. Later, it was possible to utilise annual household budget surveys systematically in the current estimations, for both consumption goods and services. As from 2010 however the HBS was stopped due to low quality, and no surveys were conducted in 2010 and 2011. After this, larger periodic surveys by various intervals would be conducted, and a new survey was carried out for the year 2012. The HBS for this year played an important role in the 2014 main revision work. While still relying much on the annual

changes resulting from retail trade statistics, the results from household budget surveys are assessed and found useful to variable degree throughout the COICOP groups. The survey from 2012 is up to now the latest one, but a new survey is planned to be completed in 2022 and may come to be used in the next NA main revision. In Norway, the tabular approach designed by Eurostat for the estimation of household consumption expenditure has not been followed, although there are some kind of similarities in the way estimations are organised between the Eurostat and Norwegian approaches.

1.5.6 NPISH consumption expenditure has been explicitly estimated in the Norwegian national accounts only for a relatively short time (since 1995 main revision). The estimates are uncertain as indirect methods are applied. Efforts are made to replace the indirect use of information from the government accounts by more direct sources. The avenues to be exploited could be accounting data and developments in relation to the Business Register.

1.5.7 From the beginning of 2005, the **foreign exchange statistics (ITRS) ceased** and thereby Statistics Norway faced a major challenge in searching for new reliable statistics in the services sphere (cf. UT project). The new data collection system is used as basis for BoP statistics from 1st quarter 2005. The new elements are: (i) monthly foreign trade statistics (as before); (ii) a quarterly/annual reporting, later on quarterly only, from enterprises covering services, income and financial stocks and flows. The reports are based on business accounting data and the reporting is fully electronic; (iii) quarterly travel surveys debit – including one for day-tourism (border trade) – and one covering travels for more than one day. Credit, monthly statistics for guest-nights, hotels, camping, cottages - combined with periodic consumption surveys among foreign visitors; (iv) various administrative sources for various BoP items.

Independence from other approaches

1.5.8 It has been described elsewhere in the Inventory that the NNA compilation is made in the framework of **annual supply and use tables**, by applying all three approaches to GDP and using relatively **detailed commodity flows**.

Valuation

1.5.9 Valuation is **particularly relevant for transactions in goods and services**, but also to the general aspect of **time of recording**. In general, the accruals basis principle of recording is applied in the NNA.

1.5.10 The use categories - both intermediate consumption and final uses - are valued at **purchasers' prices**, including **exports at f.o.b.** and **imports at c.i.f.**. According to the ESA 2010 principles, a global c.i.f./f.o.b. correction is to be made to arrive at imports in f.o.b. prices. This is in a way complemented in the NNA and in the balance of payments, and such an alternative estimation of imports at f.o.b. prices has been made for reporting to Eurostat, OECD and the IMF. In the NNA, **household consumption expenditure** is recorded in **purchasers' prices**. **Gross fixed capital formation** is also valued at **purchasers' prices**, including installation charges and other costs. Products used for **intermediate consumption** are also valued at **purchasers' prices**.

Transition from private accounting data to national accounting concepts

1.5.11 This is generally an issue faced with the use of **annual accounting statistics (SBS)** and **inventory data** for the compilation of changes in inventories, but the latter information has not yet been introduced in the NNA for this purpose. This may change in the future, however, as ways for improvements are being explored on the research agenda.

The roles of direct and indirect estimation methods

1.5.12 **Direct methods** are used, except that changes in inventories basically are derived as a residual at product level, and subsequently, by adding up, to reach an estimate of changes in inventories at global level. **Indirect estimation methods** are also used partly for intermediate consumption when annual sources are lacking (quite limited after the SBS data have been introduced).

The roles of benchmarks and extrapolations

1.5.13 The role of benchmarks and extrapolations is of **some importance** in the NNA compilation within the scope of the expenditure approach, in particular, in estimating household's final consumption expenditures. It means that new levels obtained initially for the benchmark year are extrapolated to subsequent years so that revised time series are being established, normally from the same quality of sources that was initially introduced for the benchmark year.

1.5.14 **Benchmark** has an important role to play when undertaking a **main revision**. It is usually both convenient and useful to establish revised levels for the NA estimates for a **benchmark year** in the first place. Given the annual sources available, the role of **extrapolations** - in this respect and in general - is restricted to the main revision process only, and not to sources. It means that new levels obtained initially for the benchmark year are extrapolated to other years so that revised time series are being established, normally from the same quality of sources that have been introduced for the benchmark year.

The main approaches taken with respect to exhaustiveness

1.5.15 Adjustments to the expenditure approach have been made to ensure exhaustiveness, e.g., adjusting **Household consumption expenditure** explicitly as part of the **NNA main revisions**. As the Norwegian approach to estimating household consumption expenditures for years between the main revisions is more based on extrapolation and the commodity flow method in place of the tabular approach, the adjustments can be explicitly articulated for the benchmark year only. **Illegal activities** have to some extent been estimated and **included**, meaning for instance that there are estimates made for value added in prostitution services and distribution of illegal drugs and smuggled spirits, which were first included in the NNA through the 2011 main revision.

1.6 The balancing or integration procedure, and main approaches to validation

1.6.1 National accounts work in Norway has since the beginning been built on **the commodity flow method**, which has served as a basis for a **complete integration between national accounts and input-output tables**. Supply and use tables have been in use for more than 60 years in the Norwegian National Accounts. Information in **four main dimensions** - by products, by industries, by categories of final use, and by different valuation - is taken on board in designing the system. The system has a **supply side** and a **use side**, the two sides are balanced in basic prices (originally in producers' prices), forming a basis for the national accounts and input-output tables. In the NNA, the balanced commodity flow system contains a **supply table** and **use tables for the various segments of purchasers' prices**, i.e., basic prices, non-deductible VAT, other taxes on products, subsidies on products and trade margins and other margins. By adding the segments, the use table in purchasers' prices is obtained.

1.6.2 The commodity flow system could be seen as a **main system** to which a **number of sub-systems** are attached. These commodity flows (supply and uses for the products and split into various value components) amount to **200 000 elements**, of which 70-80 000 are non-zero elements and consequently have to be estimated. The work is **highly computerised**, enabling to cope with data at this level of detail.

1.6.3 The basic philosophy behind the **design of such a detailed system** is to create a framework that could utilise all kinds of specific information - by products, by industries, by categories of final use, and by different valuation. And the system should be robust to changes in definitions and classifications and allow data users a maximum of flexibility. To provide a good basis for deflation is another important concern, with positive impact on the quality of the constant-price estimates.

1.6.4 As regards **product-related information**, the important consideration behind the choice to handle relatively detailed specifications is the wealth of product data available from external trade statistics and manufacturing statistics in particular. Around 900 NNA-products are nonetheless far below the product numbers in those two main sources. As regards **industry-related information**, the NNA level of detail is reasonably well matched with the availability of production statistics and similar industry-related sources, in particular the SBS. As regards **categories of final uses**, the NNA level of detail has a reasonably good matching between detailed products (services) and detailed breakdown of government final consumption expenditure with basis in government accounts linked to common database with the national accounts. With periodic household budget surveys available, the same considerations could be made around a detailed breakdown of household final consumption expenditure. Also, for gross fixed capital formation, the number of categories has been fairly high. In this area - more than in the case for the consumption flows - the estimation benefits from the detailed product breakdown and the nature of the known product supplies, in addition to the information on the user industry. For changes in inventories - apart from a few special items - the Norwegian situation calls for no sub-categories at all, while utilising the detailed product breakdown to monitor and estimate change in inventories for each product. For exports and imports, the product-category cross-classification has a similar position as for changes in inventories, in the sense that product details are far more important than sub-categories in the NNA. As regards **valuation-related information**, the most important value components are contained in the difference between purchaser's price and basic price of each commodity flow. They are specified for proper treatment, i.e., the trade margins and other kinds of margin combined, non-deductible VAT, other taxes on products and subsidies on products.

1.6.5 **The supply side** of the NNA system is contained in a **matrix for domestic output (make matrix)**, the size of which is approximately 900 products by 131 industries (154 industries in practice when distinguishing the different type of producers). **Imports** are added at the level of the 925 NNA-products as well. Customs duties are considered taxes on products. **Supply in basic prices** thus consists of output in basic prices and imports in c.i.f. prices. **Imports c.i.f. of goods** are fed directly into the national accounts system from the files containing external trade statistics. **Imports of services** are coordinated with the integrated balance of payments statistics. **Output** is calculated in several parts and ways. For **manufacturing** and mining and quarrying, a master file has been established and updated annually to transform the data from manufacturing statistics to the NNA-products. For **non-manufacturing industries**, a great number of different sources and methods of estimation are used. For some industries, such as government services, only few adjustments are required, while there is a varying degree of closeness to source data in other industries, and in some industries a great number of adjustments are needed. The process has been more uniform in later years with the use of the SBS-based statistics in most industries.

1.6.6 **Total use of each of the NNA-products** - also in basic prices - is to be **confronted with the supply** in the balancing process. This involves **several steps**. First, each category of use in purchasers' prices must be estimated. The product composition of each category of use is determined as well at this step. Second - in one operation including the product breakdown - the corresponding value in

basic prices is calculated. Third, a first phase of the balancing of each product is carried out including the estimation of changes in inventories of each product. Total **exports** and the breakdown on products are known from external trade statistics and balance of payments statistics. Total **intermediate consumption** in each industry is based on much the same sources as for output, but in general the estimation issue is more complicated. For manufacturing industries, intermediate consumption data have been readily available along with the data on output. In recent years, however, the situation has deteriorated although manufacturing input data regularly are presented on tape for use in the NNA estimation. For industries outside manufacturing industries, the data situation earlier varied quite a lot from - at best - sound accounting information to - at worst - estimating total intermediate consumption as a rather unfounded fixed percentage of output. With the SBS-based data ready, the situation improved quite substantially as the level of intermediate consumption can be estimated directly from the source data. The initial estimates for each of the items of **household consumption expenditure** are either made directly in current values or - more often and eventually for all COICOP groups - as estimates of growth rates at current prices multiplied by the latest figures of the preceding year. The growth rates are the results of several transformation processes that translate the classifications of the retail trade turnover index and the SBS-based annual statistics for retail trade into the COICOP group used in the NNA. In this way several different growth rates can be obtained for each particular consumption group. Furthermore, the price index for each group is taken into consideration. It is a matter for experienced national accountants to choose the most likely growth rate for each group. Data needed for the estimation of **central and local government consumption expenditure** are received from the specialised division on government finance statistics. Included is also a detailed breakdown of government sales (fees from households and other sectors). The breakdown of government consumption is applied in the commodity flow system of the NNA as well. For **gross fixed capital formation**, transactions in connection with buildings and structures, and breeding stocks, are determined from the estimates of output for the construction industry and agriculture, respectively. The initial estimates for the groups of machinery and equipment, including transport equipment, have traditionally had a weaker quality, as basic statistics from the use side in many cases have been scarce or rather uncertain. In the balancing process, the commodity flow system for investment goods has therefore been allowed to overrule the initial estimates more than in any other category of final demand. Nonetheless, the basic statistics are mostly industry-based. **Changes in inventories** are a weak point in the compilation of national accounts in Norway, since reliable data have not been available for the particular product-oriented compilation context used. The commodity flow method has therefore a direct application for this item.

1.6.7 The **initial use table** is a use table **in purchasers' prices**. First, a **set of balances for the value components** lying between purchaser's price and basic price, i.e., non-deductible VAT, other taxes on products, subsidies on products, and trade and other types of margins, respectively, are calculated. These are components that are determined initially on the use side following the commodity flow approach and the explicit use of catalogues specifying which flows are involved. Once having determined their use, the corresponding notional item on the supply side is generated. Determining the flows of margins are somewhat more complicated, as use side information by products is reconciled with supply side information by industries. While the balancing leaves the initial use side estimates unaffected for the other value components, this is normally not the case for the margins. Trade margins in particular - as well as other margins to some extent - are sometimes corrected on the use side by products when the totals of wholesale and retail trade margins calculated for all uses are compared to the total supply of each of these kinds of trade margins. If there are big differences, the matter is looked into. This may result in adjustments of trade margins for certain categories of final demand, and thereby affecting other flows, most typically the initial estimate of changes in inventories. The balancing of the margins thus constitutes a particular and complicated process.

1.6.8 Having determined the balances for the value components between purchaser's price and basic price, a **basis for the confrontation between supply in basic prices and uses in basic prices** (in producers' prices in early years of the NNA) has been obtained. It should be emphasised that the

balancing process is **not just a computerized operation**. It is a manual operation or balancing process, in which even going back to the most detailed primary statistics is necessary from time to time. The **art of national accounting** takes over from the techniques of national accounting, in a way that usually the art is shared between a few experienced people. It should be stressed, however, that the manual balancing process indeed is computerised, in the sense that each person engaged in the balancing works on-line from a PC.

1.6.9 The **balanced commodity flow system** described above might be seen as consisting of:

-	Supply matrix in basic prices
-	User matrices, separately in
	Basic prices
	Non-deductible VAT
	Other taxes on products
	Subsidies on products
	Trade margins and other margins

1.6.10 When these user matrices are added, the **use matrix at purchasers' prices** is arrived at. The Norwegian national accounts have **articulated flows of the various value components** embodied in their supply and use tables. In the NNA, the most important value components between purchaser's price and basic price of each product flow are specified, technically by 2-digit codes connected to each pair of transaction by product identification:

10	Basic price
11	Taxes on product
12	Subsidies on product
14	Wholesale and retail trade margins
15	Net taxes on trade margins
17	Non-deductible VAT

1.6.11 **Value component items for aggregates** can also be derived:

13	Producer's price	(defined as: 10 + 11 - 12)
16	Trade margins in producer's price	(defined as: 14 + 15)
19	Purchaser's price	(defined as: 13 + 16 + 17)

It is worthwhile to note that this first value component aggregate - item 13 for producers' prices - is taken as a first departure in the balancing process, before the subsequent balancing in basic prices takes place.

1.6.12 The actual supply and use tables in Norway - compiled on annual basis - are **not published in all details** but are **obtainable for users** of the national accounts. The level of details is indicated in the classification chapter, in particular concerning products, industries and categories of uses.

1.6.13 From the supply and use tables, **symmetric input-output tables** are constructed on an **annual basis**.

1.6.14 **Other approaches** are also used to validate the estimates of GDP and GNI. It should be emphasised that **integration** has been a strong motivation to broaden and harmonize the estimates of the "satellites" of **labour accounts** and **balance of payments** with those of the central national accounts. The finalization and publishing of labour accounts, balance of payments and national accounts are made by the same unit (the NA unit) in Statistics Norway, and by use of the same data and coding structures (systems).

1.7 Overview of the allowances for exhaustiveness

1.7.1 The approach taken by Eurostat for checking exhaustiveness of GNP (GNI) estimates has been set out in **four titles of the Commission Decision on exhaustiveness**:

Title III	Description of the existing calculations and adjustments made to ensure the exhaustiveness of Member States' GNP estimates
Title IV	Validation of the estimates of employment underlying the present GNP estimates
Title V	Description of the regulations and statistical adjustments pertaining to income in kind and tips or gratuities
Title VI	Investigation into the feasibility of the use of information from fiscal audits for improving the exhaustiveness of the GNP estimates

1.7.2 The follow-up to the Commission Decision on exhaustiveness was targeted on four specific topics: **construction, distribution, use of household budget surveys**, and **use of Intrastat data**. This work addressed best methodologies to be used for construction, distribution, on the use of household budget surveys and on estimating imports and exports under the Intrastat system.

1.7.3 In Norway, a main effort to improve exhaustiveness in the context of national accounts was made during the **main revision in 1995** when the ESA95 was implemented. Titles III, IV and V were addressed, as well as the special topics of construction, distribution and use of household budget surveys. As part of the **2011 main revision**, the exhaustiveness adjustments were reassessed for the taxi industry, hotels- and restaurants and beauty treatment and hairdressers. The results were that the adjustments were kept unchanged (relatively) for hotels and restaurants and hairdressers, while the adjustment for taxis was changed. Here a new adjustment for underreporting (tax fraud) from the registered companies was added to the former adjustments for tips and pirate taxis. In addition, adjustments for exhaustiveness were introduced for the construction industry. This new adjustment was based on analyses of information from various sources related to the industry, including data on employment and occupational groups or categories. Adjustments for illegal activities due to distribution of illegal drugs, smuggled spirits, and prostitution services were also introduced. Title VI

has not been explored during the main revision, as conditions for fruitful results were considered less promising at that time. The last special topic - use of Intrastat data - was not applicable to Norway as a non-EU member country.

Production approach

1.7.4 As mentioned in paragraph 1.7.3 however new assessments of adjustments for exhaustiveness were done as part of the 2011 main revision and the results revised the total adjustments somewhat upwards compared to the previous figures.

1.7.5 **Title III** refers to a number of explicit and implicit adjustments made to the source data on the production approach to improve exhaustiveness. In summing up on these adjustments, it is observed that in 2019 total adjustments made to ensure **exhaustiveness from the production approach** added to NOK 24.2 billion, or **0.7 per cent of GDP** and GNI. Adjustments for 2019 were highest in NACE F Construction.

Expenditure approach

1.7.6 As regards the **expenditure approach** and methods used to ensure exhaustiveness, the allocation of adjustments identified relates to household final consumption expenditure, gross fixed capital formation (and intermediate consumption) in particular, and to a lesser degree to final consumption expenditure of NPISHs and exports. Indirectly, imports and changes in inventories are affected as well.

1.7.7 Adjustments to the expenditure approach have been made to ensure exhaustiveness, e.g., by adjusting **Household consumption expenditure** explicitly as part of the **NNA main revisions**. As the Norwegian approach to estimating household consumption expenditures for years between the main revisions is more based on extrapolation and the commodity flow method in place of the tabular approach, the adjustments can be explicitly articulated for the benchmark year only. **Illegal activities** have been estimated and **included**, meaning for instance that there are estimates made for household consumption expenditure for items such as narcotics, prostitution and smuggling.

1.7.8 Adjustments made when **searching for best choice of sources and methods** involve the review of the sources that are available, and steps are taken accordingly to improve the estimation. For instance, household budget survey data are not utilised when loss of coverage is existent, such as for alcoholic beverages, tobacco and for some other consumption goods. Exhaustiveness has also been influenced from the revised estimates of trade margins and use of wholesale and retail trade statistics. Thus, improvement in exhaustiveness has been achieved through the revised estimates of both household consumption and output of wholesale and retail trade.

1.7.9 **Final consumption of the NPISHs** is affected from three items initiated from NACE N and NACE O which might be looked upon as adjustments for exhaustiveness: services of catastrophic and aid institutions estimated from the use side; part of ambulance services; and communal work for/and sporting services.

1.7.10 Final consumption expenditure of NPISHs has had a **weak source basis** and is still mainly estimated from indirect use of government accounts, such as distributive flows of grants etc., with due account taken to fees from households and others. In the effort of broadening the accounts of the NPISH sector, the possibilities have been explored for estimating final consumption expenditure of NPISHs in a more direct way in years to come, earlier based on the Johns Hopkins project involvement in the late 1990s, and now also through the development of the SBS for relevant

industries. Information from study on voluntary work utilized for the **satellite account** can be also of importance. In this process, adjustments of improving exhaustiveness play a key role.

1.7.11 **Government final consumption expenditure** has not been affected by considerations of improved exhaustiveness, since general government accounts are used as sources without taking into account adjustments of this kind.

1.7.12 **Gross fixed capital formation** has been affected by the adjustments made on including own-account construction of dwellings (new and existing dwellings).

1.7.13 Gross fixed capital formation most often has an **industry-related source basis**, which means there are some resemblances with the estimation process of the different industries with respect to other items such as output and intermediate consumption. In the next phase, the **commodity flow approach** takes a substantive role. Altogether, therefore, adjustments of improving exhaustiveness play a key role here as well. In particular, the service industries have lacked adequate sources for the estimation of gross fixed capital formation and thus necessitate adjustments for exhaustiveness. Situation has been improved as the SBS-based investment data were introduced in the 2002 revision, but still the data have to be further refined for use. Also to be mentioned is that as part of the 2011 main revision, estimations were made especially aimed at new items of GFCF like originals.

1.7.14 **Changes in inventories** have no reliable source as a basis for estimation, which means that adjustments are made to the estimates in the balancing process and thereby serve to ensure better exhaustiveness, especially by applying a detailed balancing process. There is work needed for future main revisions.

1.7.15 **Exports** has been affected through foreign ownership adjustment to oil and gas fields in the North Sea, which has raised output, value added and exports.

1.7.16 Exports and imports are estimated from the external trade statistics, foreign exchange statistics (ITRS) (until 2004), and in combination with maritime transport statistics, oil and gas activity statistics and some other sources. The **close integration between national accounts and balance of payments** is important and serves to ensure exhaustiveness. In particular, this is important in the area of **ocean transport** where the two different sources – sample survey of trade in services and maritime transport statistics - have resulted in the need for adjustments. Also, for the travel item, adjustments are made, by means of survey data with tourist statistics.

Income approach

1.7.17 Treatment of **income in kind** is listed by Eurostat as a main issue in the context of income approach as regards exhaustiveness.

1.7.18 A **Norwegian tax reform** was set into effect on 1st January 1992. The basic theme was to reduce tax-induced distortions to a minimum by lowering the statutory tax rates and to broaden the tax bases, i.e., in a direction of more accurate measurement of income. A second tax reform was set into force in 2006, introducing tax on dividends. Both reforms implied changes for wage earners, self-employed and corporations, and were far-reaching because they entailed changes for most taxpayers.

1.7.19 Article 13 of the Community Decision on exhaustiveness lists a number of items of income in kind and asks about the **tax rules in force**. The treatment in Norwegian taxation for these cases is summarised later in the Inventory.

1.7.20 **Wider coverage on wages and salaries in kind** was achieved with the extensive introduction of **Structural Business Statistics (SBS)** since the late 1990s. It was introduced mostly in the 2002 main revision, while utilising data from the register of wages and salaries (which existed prior to the

establishment of the *A-melding* from 2015) to achieve a breakdown into components mainly. Since the main revision in 2019, the *A-melding* has been used as source for the compilation of wages and salaries both in cash and in kind. The relevant laws defining taxable income due to labour work have been somewhat tightened for the last decade, resulting in wages in kind being now in general considered as taxable income and due to be reported to the *A-melding*.

1.7.21 It is not possible to separate some types of payments in kind from payments in cash (such as daily allowances in travel, deductible expenses on use of company cars, etc.). The **borderline problem** is basically an issue of whether to record the payments as **intermediate consumption** or wages and salaries in kind. In order to determine which of the two transaction flows to follow in each case, the principles of SNA/ESA have been used as criteria. But until more specific information is obtained as to the composition of each of these items, the convention adopted in the Norwegian national accounts is to **allocate 25 per cent to wages and salaries in kind and 75 per cent to intermediate consumption**. This method is used for all deductible items related to food and accommodation, use of cars and other deductible expenditures.

1.7.22 In effect, the national accounts estimation of **wages and salaries in kind** is organised as an integrated part of the Labour accounts. Wages and salaries in total by industry are for all practical purposes fixed by the *A-melding*.

1.7.23 A second issue relating to the income approach is **treatment of tips**. Two areas often mentioned are **restaurants and taxis**. An estimate on tips in restaurants is based on the tax authorities' estimate of 3 per cent addition to registered wages for waiters and waitresses who do not report tips. **For taxi operation**, based on survey results from the mid-1990s, adjustments are made for both tips and unregistered activities. That would give rise to a similar small amount as for tips in restaurants.

1.7.24 Although some experts tend to take the view that tips are low and even decreasing in importance in recent years, we should watch out for cyclical fluctuations, i.e., people tend to tip more in good times. A reassessment of these adjustments was however carried out as part of the 2011 main revision. In Norway the use of tips is not so common as in most other countries, instead the aim and culture are that the salaries should be sufficient, and that all incomes and costs should be reported to the tax authorities.

Checks to ensure exhaustiveness

1.7.25 **Balancing** at both current prices and constant prices at a **detailed level** has been an important check to ensure exhaustiveness. The balancing process at current prices is described rather detailed in the Inventory, as are also the approaches used to calculate GDP.

1.7.26 **Balancing at constant prices** - a topic not described in the Inventory - uses the same framework of integrated supply and use tables, by deflating current values by price indices at detailed product level. The **deflation approach** has in fact **two dimensions**. First, it is differentiated by main categories of supply and use (deflating output, imports, exports and implicitly domestic use). Second, differentiation is made through valuation (deflating current values at basic prices by price indices and implicitly determining the other value components, including adjustments against values at purchasers' prices). Constant-price estimates for aggregates of supply, uses and value added follow through adding up and balancing constant-price estimates of products. They include aggregates such as output by industry, categories of exports and imports, categories of other final uses, intermediate consumption by industry, value added by industry and GDP. This entails that the principle of double deflation is applied through a detailed input-output framework (supply and use tables). The condition of great details is linked to the condition that the individual products are as price homogeneous as possible, with a possibility for adapting to basic statistics available for values as well as prices.

1.7.27 It should also be added that Statistics Norway adopted the principle of **annual chaining** already around 1990, and the chaining is carried out separately for all items (with few exceptions). Thus, constant-price estimates are calculated at prices of the previous year and the base year is changing every year.

1.7.28 In describing **value added tax (VAT)**, a most interesting check between **theoretical VAT** calculated in the national accounts and actual VAT recorded in the government accounts is referred to. Main results of this kind of check are a difference of 3.6 per cent on average for the period 2000-2012, and that of 3.5 per cent in 2019, when using time lag adjusted government accounts figures. The small and positive differences show that more activities are covered than are evidenced by the taxation authority. Statistics Norway believes that the size of the difference is reasonably well in its context as checks to ensure exhaustiveness. Studies and comparisons made in all the main revisions have confirmed the picture given above.

Employment

1.7.29 Another important check on the level of GDP is provided by the comparisons of the national accounts estimates of **employment and compensation of employees** with the same estimates in the **labour accounts (LA)**. This is to a certain extent dealt with in the Inventory on compensation of employees by kind of activities when reviewing former and revised figures on wages and salaries per full-time equivalent employee. Norway is in a favourable position in terms of having labour accounts compilation integrated with that of the national accounts.

1.7.30 **Consistency considerations** play an important role in estimating employment in the NNA. Since the framework generally applied to the compilation of national accounts is the annual supply and use tables, detailed employment data by branch (industries) are considered adjacent information of the same format as that of compensation of employees. Furthermore, employment data for employees should be fully consistent with the data on compensation of employees for internal consistency reasons. In Norway, therefore, the estimation of employment has been **closely linked to the estimation of compensation of employees and to production** (output and value added). These are all estimations carried out in the Division of national accounts and are thus reviewed and discussed with a view to achieve a best possible consistency.

1.7.31 **Labour Accounts were established in Norway** in the last part of the 1980s. Three basic employment measures were introduced: employed persons, full-time equivalent persons and total hours worked. The three types of employment concepts are linked by a set of relationships to a consistent system and are specified according to industry, status (employees or self-employed), and sex. The 2006 main revision added another variable, jobs, to the list. Part-time workers, conscripts and persons temporarily absent from work are included in the employment concepts, in line with definitions in LFS and ESA95. From 2012, education is also included as a separate variable.

1.7.32 Viewed against a **general Labour Accounts structure**, the Norwegian approach has up to recently focused on employed persons and excluded the concepts of jobs and filled posts. There was no explicit treatment of persons with more than one job, due to shortcomings in the primary statistics. There was, however, work on estimating number of jobs in the Norwegian Labour Accounts, with estimates released in December 2006. Unemployed persons and persons outside the labour force have not been covered in the estimations. However, LFS data provide consistent estimates for these concepts, which have been linked and utilised in labour market analyses. Vacancies constitute another area not utilised in the Norwegian Labour Accounts, although primary statistics on the number of vacancies are compiled by agencies outside Statistics Norway. Finally, it should be mentioned that the distinction between hours worked - an essential element in the Norwegian system - and hours paid for has not been clearly developed.

1.7.33 **Several sources and methods** are used in the estimation. Basically, there are direct methods or approaches using either **industry-based data** of the same kind as used for production etc. or data from the **Labour Force Surveys (LFS)**. Of general importance is the expansion of the LFS as from 2004 also to include data on **non-resident employees on short-term stay** (less than 6 months), previously not covered. Which source to use has been determined by the particular circumstances of each industry, considering the advantages and weaknesses in each case. Implicit methods are also possible, when taking into account wage sums and wage (rate) statistics if considered to have better quality than employment data. The picture of sources and methods throughout the various industries is quite complex and reflects that quality of the data varies considerably from industry to industry.

1.7.34 There has been a special feature in the Norwegian system that **LFS determines the total** number of employed persons in the national accounts. This restriction was introduced from the fact that LFS is more reliable, the more aggregated are the measures, but also from an attempt to eliminate gaps for certain industries that have not been resolved from using only direct information.

1.7.35 The **procedure used for the estimation of employment** categories and the utilisation of information from the LFS may be outlined as follows:

- (i) Basic statistics of different kinds are compiled by branch at detailed industry levels. Inconsistencies between the data sources are revealed either directly or indirectly through the use of the conceptual relationships and consequently adjusted.
- (ii) The first-step estimates are aggregated to totals and to a specified intermediate level of aggregation. The total number of persons employed according to the LFS is then compared with these aggregates.
- (iii) Discrepancies lead to feedback adjustments in the detailed estimates, but not implemented as an automatic procedure. Relevant adjustments are indicated by use of aggregated results at intermediate level, i.e., at 1-digit NACE level. The feedback adjustment is mostly directed to branches with weak statistical information on employment. The process of adjustment on details is repeated until the result is considered to be acceptable.

1.7.36 This **process of harmonisation** between LFS and other data sources is conducted **separately for employees and self-employed**. Some of the conceptual relationships are relevant for employees only, and the data availability at detailed industry level certainly is weaker for self-employed. The data for self-employed and unpaid family workers in the national accounts are however more directly based on the Labour Force Surveys.

1.8 The transition from GDP to GNI

1.8.1 The **transition from GDP to GNI** involves just a handful of items. GNI has historically been lower than GDP in Norway. Since 2002, however, GNI has become higher than GDP in Norway. In 2019 the difference is NOK 109.8 billion or 3.1 per cent (see table below).

GDP and GNI. NOK billion and per cent. 2019

<i>Item</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
(1) GDP	3563.5	100.0
Compensation of employees, credit	5.4	0.2
Property income, credit	378.0	10.6
Interest, credit	149.5	4.2
Dividends paid, credit	245.8	6.9
Other, credit	- 17.3	-0.5
Compensation of employees, debit	40.7	1.1
Property income, debit	233.4	6.5
Interest, debit	105.1	2.9
Dividends paid, debit	117.1	3.3
Other, debit	11.2	0.3
- Correction FISIM	- 0.5	-0.0
(2) Primary income, net	109.8	3.1
(3) = (1) + (2) = GNI	3673.3	103.1

1.8.2 Compensation of employees to abroad and compensation of employees from abroad are two items of minor importance both compared to total compensation of employees and to other items involved in the transitions from GDP to GNI. Total compensation of employees **on a national basis** amounts to **98.2 per cent** of total compensation of employees on a domestic basis.

1.8.3 Compensation of employees to abroad is defined according to ESA 2010 and BPM6 (BoP expenditure item: compensation of employees). In Norway, previously this item mainly consisted of compensation to non-resident seamen and compensation to non-resident pilots (and other air transport personnel). Compensation to **non-resident seamen** on ships operated by Norwegian shipping companies, was and still is one of the main sub-items. It is estimated from maritime transport statistics compiled by Statistics Norway, and tax authorities' data. In 2004 several countries, including many eastern European ones, entered as new members in the EU. According to the act of the European Economic Area (EEA), inhabitants of the new member states were allowed to work in Norway. The result was a rather sharp increase in the number of employees resident in these countries working in Norway for Norwegian enterprises and therefore the compensation of employees to abroad increased considerably. The *A-melding* contains information on whether the employee (and his/her payable wage) is resident in Norway or in another country and is thus a good source for estimating the compensation of employees to abroad and is then used for this purpose. In 2005 a Eurostat-co-financed project led to a re-estimation of the item compensation of employees to and from abroad, and the main finding of this exercise was that compensation of employees to abroad, for the year 2004 was raised 100 per cent, from NOK 6 to 12 billion (0.75 billion Euro to 1.5 billion Euro).

1.8.4 Compensation of employees from abroad (BoP income item: compensation of employees) relates to Norwegians working abroad. This item has for a long time been estimated as a group in its entirety, based on information from the tax authorities and from the register of wages and salaries (RWS) that existed prior to the *A-melding*. It is recognised that this information is rather uncertain, and further improvements of the data were required. Thus, the Eurostat financed project mentioned in 1.8.3 also included estimation of compensation of employees from abroad. One should note however that compensation of employees from abroad was hardly revised at all, being estimated at NOK 3.1 billion

for 2004. Hence the ratio of compensation of employees between debit and credit was raised from 2:1 to 4:1 for 2004.

1.8.5 Taxes on production and imports are not applicable in Norway. Possibly, it may be that a small part of taxes included under current transfers (income side as well as expenditure side) could refer to taxes on production and imports. In any circumstances, the amount would be quite negligible.

1.8.6 Subsidies are not applicable in this context either. It may, however, be that a small part of subsidies included under current transfers refers to subsidies on production.

1.8.7 Investment income includes interest, dividends, remittance of branch profits and reinvested earnings. In 2019, **interest** is the second largest item contributing to investment income and investment expenditure (see table above). The sources used are direct reporting from non-financial enterprises (UT-reporting), financial enterprises and government. The BPM6 recommends that interest should be recorded on an accrual basis and the new sources are all based on business accounts and not payments data and therefore should be more in line with the recommended principle of recording.

1.8.8 The item **dividends** tend to fluctuate in Norway. This is to large extent related to dividends to abroad in connection with fluctuating prices in the oil extraction industry. For this item, new direct sources based on business accounts are used as from 2005. In 2019, dividends are the largest item contributing to property or investment income on both the credit side and the debit side (see table above).

1.8.9 The treatment of the income of **Undertakings for Collective Investment (UCIs)** has been discussed during the 1990s, especially relating to ESA79 as to clarify that such income is to be recorded as property and entrepreneurial income, no matter whether it is distributed or not. In the latter case, it should be treated first as an income paid out by the UCI to its shareholders, and then reinvested immediately by the latter into the UCI. This treatment is also applied in ESA 2010 (cf. also reinvested earnings). Two observations should be made in the Norwegian case: **UCIs** are not many and **not important** in Norway, and the treatment is likely followed on the debit side (involving Norwegian financial corporations), but not on the credit side (involving non-resident financial corporations).

1.8.10 Reinvested earnings are the difference between the total operating surplus in direct investment enterprises (income for the investor) and distributed dividends. Reinvested earnings are estimated based on information collected as part of the surveys on **direct investment**. From 2005 direct investment data are based on the **new survey reporting system** of Statistics Norway for balance of payments purposes (**UT**). For direct investment abroad from 2007, a separate survey by Statistics Norway becomes another important data source. In addition, information from annual accounts submitted to the Register of Company Accounts is used as a source to detect and collect data on Norwegian direct investment abroad. The statistics on foreign direct investment in Norway is based on the new BoP-reporting for non-financial enterprises (UT), which has 2004 as the first reference year, and annual accounts submitted to the Register of Company Accounts. Information from newspapers and the Internet is used as a supplement to detect and collect data on new investment abroad and in Norway.

1.9 Main classifications used

1.9.1 The main classification schemes used in the NNA for the estimation of GDP according to the production approach are the activity classification based on NACE Rev.2, and the product

classification based on the corresponding CPA. They replaced in the 2011 main revision the former activity classification based on NACE Rev.1, and the corresponding CPA.

1.9.2 The main classification schemes used in the NNA for the estimation of GDP according to the expenditure approach in the field of consumption are the purpose or purpose-like classifications of COICOP, COFOG and COPNI. They are used for final consumption expenditure of households, general government and NPISHs, respectively.

1.9.3 Other classifications used are the classifications of fixed assets by type and of activities (similar to the production approach) used for gross fixed capital formation (GFCF), and breakdown on categories of inventories, and on exports and imports.

1.10 Main data sources used

1.10.1 A wide range of sources are used in the compilation of the Norwegian national accounts and its aggregates at current prices. Over the years a trend has been the exploitation of administrative data, in particular accounting data reported to the authorities for other purposes than statistics. A case in point is the tax declarations used in compiling the Structural Business Statistics by industries.

1.10.2 The following table list the **main sources** and their main uses according to the three different approaches for estimating GDP:

Main sources used for compilation of the Norwegian national accounts

<i>Source</i>	<i>Production approach</i>	<i>Income approach</i>	<i>Expenditure approach</i>
Structural business statistics (SBS)	Output and IC		Gross fixed capital formation
Specialised production statistics (primary industries, oil and gas)	Output and IC		Gross fixed capital formation
Detailed reports from financial corporations	Output and IC		Gross fixed capital formation
General government accounts	Output and IC	Compensation of employees	Gross fixed capital formation
External trade statistics (goods and services)			Exports and imports of goods and services
Register of jobs, remuneration, social benefits and taxes paid (<i>A-melding</i> in Norwegian)		Compensation of employees	

1.10.3 These six fields of statistics are the **most important statistics** used to compile the national accounts and its main aggregates, i.e., GDP and GNI. One interesting characteristic to all these sources are that they are **more or less based on administrative data**. The Structural business statistics (SBS) for most industries is compiled by combining information from the Directorate of Taxes' Income Statements and additional sample surveys. The specialised statistics concerning primary industries and

oil and gas extraction are partly based on data collected for administrative purposes, within on the one hand farming, forestry and fishing and on the other hand, the petroleum activities offshore on the Norwegian continental shelf. Financial institutions are obliged to submit detailed quarterly and annual reports to both the supervisory authorities and the central bank for administrative purposes, and the same data are also submitted to Statistics Norway. Central and local government accounts are produced within Statistics Norway on behalf of the government authorities and used for compiling the national accounts as well. External trade statistics on goods are based on customs declarations, while the **Register of jobs, remuneration, social benefits and taxes paid** (*A-melding* in Norwegian) is an administrative register belonging to the Norwegian Directorate of Taxation.

CHAPTER 2 THE REVISION POLICY AND THE TIMETABLE FOR REVISING AND FINALISING THE ESTIMATES

2.1 The revision policy and the timetable for revising and finalising the estimates

2.1.1 In the past, Statistics Norway had **no specific policy on main revisions**. The history of national accounts in Norway has so far included main revisions in 1962, 1973, 1995, 2002, 2006, 2011, 2014, and 2019 after having established the first comprehensive national accounts in early 1950s. Thus, more than 20 years had elapsed since Statistics Norway undertook its second main revision in 1973 when SNA68 was implemented. **The 1995 revision - implementing ESA95 and SNA93** - was considered the third main revision of national accounts in Norway. This main revision might be regarded as a more comprehensive one than the previous revisions, because in particular new sources and estimation methods - after having been delayed for a number of years - eventually were implemented directly into the revised accounts, but also because a total restructuring of the technical infrastructure (IT-systems, chart of accounts, coding systems) was employed in the computation of the Norwegian national accounts. Finally, the efforts should be mentioned of having the Balance of Payments fully integrated with the national account compilation system, not only in a conceptual meaning but also in a technical sense, as part of the 1995 main revision.

2.1.2 **In 2002**, Statistics Norway undertook another main revision - the **fourth main revision** in order - this time without any major definitional changes to the system. See below for the rationale behind this main revision. This event, however, made it necessary to update the GDP/GNI Inventory of the new format, first submitted to Eurostat on March 1st, 2001, and then revised with the 2004 version three years later. In **2006**, the **fifth** main revision was published - when allocation of **FISIM** was introduced, together with some other changes. It was followed by an update of the Inventory in 2007.

2.1.3 Then again, in **2011** the **sixth** main revision took place, this time mainly to introduce the new industry classification **NACE Rev.2**, and subsequently an updated Inventory was submitted to Eurostat in 2012. The seventh revision – the **2014** main revision – introduced the ESA 2010 and BPM6 manuals, and another updated Inventory was submitted to Eurostat in 2015. In **2019**, a periodic revision was undertaken by incorporating into the NNA new information, and in particular, a new data source for salaries and employment A-arrangement (*A-ordningen* in Norwegian).

2.1.4 Looking back at the main revisions in the Norwegian National Accounts (NNA), **GDP** was substantially affected by approximately **10 per cent** in the 1973 and 1995 main revisions, while more moderately affected in **the 2002, 2006, 2011 and 2014 main revisions - up between 1 – 2 per cent**. As for the latest 2019 revision, the change of GDP was not significant for the years 2015 and backwards. However, for 2016 and 2017, GDP was revised down 0.7 and 0.3 per cent, respectively. While the SNA1968 revision in 1973 decreased GDP level by 10 per cent, of which 9 per cent was from definitional changes, the 1995 revision increased the level of GDP by 10 per cent, but this time 9 per cent was due to non-definitional changes. This very fact serves as a clear warning that a **period of 20 years** is a **much too long** interval between revisions of this kind.

2.1.5 **In the future**, Statistics Norway aims to implement the harmonised European revision policy, with main revisions every 5 years, although there are practical considerations that may prevent it from

taking place. Comparable results among countries are far more important today than in the past. For example, with the early implementation of ESA95, Norway released the revised NNA data in 1995, several years earlier than most other countries did (e.g., a majority of European countries did in 1999 or 2000). However, main domestic users questioned the revised estimates in terms of comparability with the other countries on several occasions.

2.1.6 **Another issue** related to revision policy is the **threshold value** for determining whether current routine revisions should be made (provisional to final) or just leave amendments for a main revision later on. In Norway, although such a threshold value is undeclared, a pragmatic approach has been followed; perhaps it may be right to say that in individual cases, revisions above approximately NOK 0.5 - 1 billion have been left for future main revisions, but this has not been strictly respected in practice (subject to circumstances).

2.1.7 **Backward revisions** are definitely also part of the revision policy issues. This has always been considered a very important issue, particularly so in Statistics Norway as the Research Department emphasizes the strong need for long time series to undertake economic analyses. The **policy followed** in Statistics Norway may be summarized in three principles:

- (i) Backward revisions made for a **limited number of years** providing **overlap years**
- (ii) Backward revisions made for a period of typically **15 - 25 years or so**
- (iii) Backward revisions made **in 2 or more steps** due to resource requirements

2.1.8 After the implementation of **ESA95** in the 1995 main revision, the accompanying backward revision was completed late 2000. At that juncture, revised ESA95 estimates had been compiled for the period **back to 1970**. In other words, in 1995, the first revised estimates were made for years starting 1988, while almost 20 years have been aligned backwards five years later. The work was done in a sequence, i.e., year by year, and in a detailed way. The work included two steps: back to 1978 in 1997, and then the remaining period 1970-1978 was completed in 2000. For the whole period, new definitions were implemented, series re-coded to NACE Rev.1 and the statistical sources on services adapted to proper level. It might be added that the backward SNA68 revision also was implemented in two steps, first back to 1962 in a detailed way, then later back to 1949 in a more summarized way. **Institutional sector accounts** of the ESA95 implementation in the 1990s were revised **backwards to 1978**, i.e., the first step was taken, while the second step was not, simply due to lack of input data for the years prior to 1978.

2.1.9 With respect to the **2002 main revision** and backward estimations, revised final national accounts figures were made for the years 1991-1999, while new preliminary figures were made for 2000 and 2001. The 2002 revision had stronger effect for the years after 1995 due to the incorporation of **structural business statistics** being adapted for the national accounts, while the effect for years from 1991 to 1994 was rather small. Time series further back, i.e., before 1991 were not revised.

2.1.10 At the other end of the scale, in **the 2006, 2011, 2014 and 2019** main revisions new figures were published simultaneously for all years back to 1970, and even including revised quarterly figures.

2.1.11 National accounts are compiled in **different versions**. There are versions according to present status - **final or provisional** - detailed or less detailed, adjusted or unadjusted. Annual aggregated accounts are normally compiled in three consecutive provisional versions and a final one, and occasionally main revisions are undertaken later on.

2.1.12 Referring to **versions compiled**, including the **periodicity**, the Norwegian situation in 2021 is indicated in the box below. Time lag in number of months is indicated. In 2021, the final figures (Main aggregates) for 2019 and quarterly data to Q3 2021 were published November 19th. The sector accounts and BoP were published December 1st.

Versions compiled. Time lag in number of months

Aggregated annual accounts	
First provisional annual aggregated version (monthly/quarterly-based)	+ 1 1/3
Second provisional annual aggregated version (monthly/quarterly-based)	+ 4 1/3
Third provisional annual aggregated version (monthly/quarterly-based)	+ 10 1/3
Final annual detailed version	+ 22 1/2
Aggregated quarterly accounts	
Provisional first version	+ 1 1/3
Final adjusted version	+ 22 1/2 after end of year (adjustment once a year)
Supply and use tables	
Provisional version	Simplified version in quarterly accounts
Final detailed version	like final aggregated annual accounts
Input-output tables	
Final detailed version	like final aggregated annual accounts
Institutional sector accounts	
Provisional aggregated quarterly version	+ 2 after end of quarter
Provisional aggregated annual version	+ 2 after end of year
Final annual detailed version	+ 23
Regional accounts	
Final detailed version	like final aggregated annual accounts
Labor accounts	
Quarterly versions	like aggregated quarterly accounts
First provisional annual version	like provisional aggregated annual accounts
Second provisional annual version	like provisional aggregated annual accounts
Third provisional annual version	like provisional aggregated annual accounts
Final annual version	like final aggregated annual accounts
Balance of payments	
First quarterly version	+ 2
Final adjusted quarterly version	+ 23 after end of year
First provisional annual version	+ 2
Second provisional annual version	+ 5
Third provisional annual version	+ 11
Final annual version	+ 23
Satellite accounts	

Tourism, System of Health Accounts, Satellite for Non-profit institutions, NAMEA	Ad hoc versions
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2.1.13 In summary, it is seen that **integrated annual accounts** have been compiled in **four successive versions**, of which the first three are provisional and the fourth is a final version. There is a clear distinction between the first three versions - which are based on accumulated quarterly compiled estimates - and the last - which regularly are based on annual data sources. The third version, like the first two, is also using the quarterly accounting system as a framework but incorporates some annual information. This kind of cycle of producing and publishing annual national accounts estimates was established fairly long time ago in Norway. Alterations have however been made in reducing time lags of the third and fourth versions to meet ESA reporting obligations timelier, while the time lags of the first and second versions now meet regular Norwegian quarterly dissemination cycle well.

2.1.14 Both the **quarterly national accounts** and the **balance of payments** quarterly accounts are published with a time lag of approximately 1 1/3 to 2 months, which again appear in a revised and final version as time passes (see the above table). Once a year, these short-term accounts data are adjusted and harmonized with the corresponding annual data. This is done for the final version in the cycle of annual accounts. Since 2018, Norway publishes aggregated monthly accounts as well, with a lag of 1 1/3 months.

2.1.15 First provisional annual version is made for the **Economic Survey**, published by Statistics Norway in **mid-March** and is a main event in Statistics Norway.

2.1.16 **Second provisional annual version** in the new cycle is made when the first quarter of the next year following the quarterly accounts approach is made, with a broader foundation with extended data set - such as data for central and local government.

2.1.17 **Third provisional annual version** is published in November of the same year, now supporting short-term indicators with provisional annual data.

2.1.18 **Fourth annual accounts version** is the **final one**, published in November another year later. Main differences between the other versions are which sources of information are available at the time when the accounts are compiled, and whether to replace the format of quarterly accounts for a detailed basis instead.

2.1.19 From the publication cycle table above, it is seen that provisional annual versions of **labour accounts** and provisional annual versions of **balance of payments** are published **at about the same time** as the provisional annual versions of aggregated annual accounts.

2.1.20 At the same time as the **final annual version** of aggregated annual accounts is published, final annual version of labour accounts, final annual version of balance of payments, final detailed version of institutional sector accounts, final detailed version of supply and use tables and final detailed version of input-output tables are all published. Satellite accounts are normally published some months later.

2.1.21 The release of the regular quarterly national accounts estimates is accompanied by a revision table revealing revisions to previous quarters and accumulated annual accounts figures. Finally, it should be added that systematic analysis of routine revisions, i.e., between provisional and final estimates, are occasionally made. In fact, this was intensified as a particular project in responding to recommendations made by the IMF (ROSC mission report of 2003). Revision analysis on annual NA estimates is being followed by a similar analysis on quarterly NA estimates.

2.2 Major revisions since the last version of the GNI Inventory

2.2.1 The main revision in 2019 introduced some changes in terms of new data sources and methods in the NNA.

2.2.2 The first change is related to **Employment and compensation of employees**. On 1st January 2015, the A-arrangement (*A-ordning* in Norwegian) was introduced in Norway, representing a **new administrative source for the estimation of employment and compensation of employees** in the Norwegian national accounts. The quality of the data reported, its high frequency, its extensive coverage, and the number of variables provided, give the justification that this data source is the preferred one when compiling figures for:

- number of employees,
- employee-jobs,
- agreed upon hours of work per week,
- overtime work,
- absence from work due to sickness and leaves, and for the estimation of
- wages and salaries.

2.2.3 However, it takes time to analyse the different variables to get a good understanding of how the figures should be interpreted according to national accounts definitions and on how the different variables reported relates to each other. The *A-ordning* has previously only been used as a source for extrapolating levels of employees in the annual national accounts forward from 2015. After publishing the revised time series in 2019, new levels on employees, hours worked in employee jobs, wages and salaries and compensation of employees based on the *A-ordning* and a few other sources, have been incorporated.

2.2.4 This new administrative source is a coordinated digital collection of employment, income, and tax deductions for the Norwegian Tax Administration, the Norwegian Labour and Welfare Administration (NAV), and Statistics Norway. This means that Statistics Norway receives information about wages and employees directly from the so-called *A-melding*, which is the electronic message containing all the information collected. All enterprises located in Norway, including local and central government and non-profit organizations, with a few minor exceptions, are obliged to report status for all jobs during the month to be reported, and a vast amount of information connected to those jobs and the persons holding them, no later than 5 days after the end of the month. The source is available with monthly data beginning January 2015. Several control-mechanisms have been established to ensure that the reports are correct. The fact that the information provided are used by the tax-authorities for taxation and by NAV for many purposes, among them calculation of financial support for people absent from work due to sickness and other types of leaves, gives the employers incentives to report correct figures. The monthly reporting to *A-ordning* is for the majority of the enterprises an integrated part of the software used to administer payments of wages and salaries and keep track of its employees. As part of the reports, all enterprises must identify themselves with the central business register code and the employees holding the jobs by the personal identity code. The enterprises are obliged to register each job under a job-identifying code. Hence, for Statistics Norway, each employee-job can be identified each month, along with the person holding the job, and the enterprise where the work takes place. Statistics Norway receives all data and add further information on the enterprises and its employees by merging the reported data with other register information. In this way the finished register data have detailed industry and sector

classification of the enterprises and quite a lot of information regarding the employees; type of education, place of living, age and so on.

2.2.5 This information, together with detailed register data concerning self-employed persons, have been used to calculate new levels for salaries and employment figures. Employed persons in total for 2016 is calculated to 2 715 000 persons, which means a downward revision of 47 000 persons. Among the industries with significant revisions are manufacturing industry and wholesale and retail trade. The corresponding downward revision in central government was 16 000 persons.

2.2.6 The new data source has also given the opportunity, according to international guidelines, to reclassify employers' cost connected to finance employees' sick leave. These costs were earlier included in D11 (ESA 2010) wages and salaries but are now included in D12 social contributions. The total effect on Compensation of employees (D1) of this change is zero, and therefore GDP is also unaffected by this change.

2.2.7 Also new calculations of pension costs in the regional health enterprises lead to a reduction from previous published figures for compensation of employees in central government. The number of total hours worked for employees for 2016 was adjusted down with 3.9 per cent from previous published figures. The time series are revised back to 2001 to avoid a break in the time series.

2.2.8 The second change refers to **Toll road companies and governmental companies administrating public transport**. One cause to some of the revisions is a regrouping of some units from market producers to general government. This applies to toll road companies as well as government-owned companies with task to administrate public transport. The latter plan and coordinate the supply of public transport and enter into contract with transportation companies which supply the transportation services. The regrouping leads to reduced market activity and increased activity in the general government sector, however the net effect on GDP is insignificant.

2.2.9 The third change concerns **General government**. In addition to the regrouping of some companies mentioned above, the compensation of employees in general government is reduced. The reason for this reduction is new calculations of the pension costs in health companies. As a consequence, the calculated value added in general government is reduced, as well as final consumption expenditure in general government. The effect of reduced pensions on valued added and final consumption expenditure in general government is more significant than the effect of the regrouping of companies mentioned above, so the total effects on value added and final consumption expenditure in general government are negative.

2.2.10 The gross fixed capital formation in central government is revised upwards for the year 2010 (more specifically for the whole period 2003-2010), since the gross fixed capital formation due to three road construction projects carried through as public-private partnerships (PPP) are now included in the figures for central government. In addition, there are some adjustments in connection to rent of land.

2.2.11 The fourth change is about **Trade through internet from abroad**. A study of the sources for calculation of internet shopping from rest of the world from 2012 leads to a redistribution of import of goods and services. The level of internet trade was at the same time reduced to 25 billion Norwegian kroner in 2017. For the year 2017 internet trade with goods are now calculated to 12 billion kroner, while the internet service trade is calculated to 13 billion kroner.

2.2.12 The fifth change is about **Export and import except from internet trade**. Import of traditional commodities as basic metals and metal products are revised downward for all years back to 2012. This correction is related to gross fixed capital formation of rigs and in extraction of oil and gas resources. Internal analyses showed that import related to investment in some specific oil rigs and some specific field development projects were doubled in the previous figures (in different periods). The size of the

downward revision in value varies from year to year, between 2 and 3 billion Norwegian kroner, for the years 2013-2016 about 15 billion in total. At the same time the analyses showed that a bigger part of some projects was conducted abroad than earlier expected, with the isolated effect being that the figures for unspecified import for commodity costs related to gross fixed capital formation or operating costs in the oil- and gas extraction were adjusted upward. In summary these analyses have resulted in larger figures for import related to gross fixed capital formation in oil and gas extraction and in oil rigs.

2.3 Planned actions for improvements

2.3.1 In 2022, the ESA 2010 recording of goods sent abroad for processing and merchanting will be introduced in the NNA. This information is now available in the External trade in services statistics. This will lead to revisions in the exports and imports series for goods and services for 2019 and before, however the revisions of GDP and GNI are expected to be small.

2.3.2 In addition, the planned main revision in 2024 will probably incorporate the forthcoming revised NACE into the NNA:

CHAPTER 3 THE PRODUCTION APPROACH

3.0 GDP according to the production approach

3.0.1 The production approach is **the main method** used to estimate GDP in Norway. For 2019 the estimation of GDP according to the production approach can be summarized in the following table.

GROSS DOMESTIC PRODUCT according to the production approach. 2019.

	<i>NOK million</i>	<i>Per cent of GDP</i>
Output, basic values	6 046 431	169.7
- Intermediate consumption	- 2 881 588	80.9
= Gross value added	3 164 843	88.8
+ Taxes on products	+ 406 140	11.4
- Subsidies on products	- 7 499	0.2
= GDP	3 563 484	100

3.0.2 For the purpose of providing a structural overview by kind of economic activity at the start of chapter 3, GDP by the production approach is specified by the **NACE Section classification** in the following overview table for 2019. In Norway, the far most important production among the 64 activities is NACE 06 (13.8 per cent of GDP).

GROSS DOMESTIC PRODUCT by NACE Section. NOK billion/Per cent. 2019.

<i>NACE Section</i>	<i>NOK billion</i>			<i>GVA as per cent of</i>		
	<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (GVA)</i>	<i>Total GVA</i>	<i>GDP</i>	<i>GNI</i>
A. Agriculture, forestry and fishing	159.4	93.8	65.7	2.1	1.8	1.8
B. Mining and quarrying	651.5	155.3	496.3	15.7	13.9	13.5
C. Manufacturing	874.7	654.4	220.3	7.0	6.2	6.0
D. Electricity, gas, steam and air conditioning supply	97.7	19.3	78.4	2.5	2.2	2.1
E. Water supply; sewerage; waste management and remediation activities	60.4	38.1	22.3	0.7	0.6	0.6
F. Construction	639.8	424.6	215.2	6.8	6.0	5.9
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	469.3	210.4	258.8	8.2	7.3	7.0
H. Transporting and storage	442.1	298.4	143.7	4.5	4.0	3.9
I. Accommodation and food service activities	101.1	53.6	47.5	1.5	1.3	1.3
J. Information and communication	282.4	137.5	145	4.6	4.1	3.9
K. Financial and insurance activities	235.1	81.8	153.3	4.8	4.3	4.2
L. Real estate activities	388.1	138.0	250.1	7.9	7.0	6.8
<i>-L. Imputed rents of owner-occupied dwellings</i>	<i>186.3</i>	<i>64.7</i>	<i>121.6</i>	<i>3.8</i>	<i>3.4</i>	<i>3.3</i>
M. Professional, scientific and technical activities	295.0	133.9	161.1	5.6	4.5	4.4
N. Administrative and support service activities	180.5	88.4	92.1	2.9	2.6	2.5
O. Public administration and defense; compulsory social security	372.9	155.6	217.4	6.9	6.1	5.9
P. Education	212.5	39.3	173.2	5.5	4.9	4.7
Q. Human health and social work activities	462.2	102.0	360.2	11.4	10.1	9.8
R. Arts, entertainment and recreation	63.4	32.5	31	1.0	0.9	0.8
S. Other services activities	57.9	24.9	33.0	1.0	0.9	0.9
T. Activities of households as employers	0.3	0.0	0.3	0.0	0.0	0.0
Total GVA	6046.4	2881.6	3164.8	100	88.8	86.2

3.1 The reference framework

General aspects

3.1.1 For introducing the production approach, it would be a good idea first to clarify some **general aspects** related to **production as economic activity**. The basic elements are output and intermediate consumption, as well as value added as the balancing item, recorded in the production account of the System. Production is defined with reference to the **production boundary**. A satisfactory solution to applying the production approach for the GDP compilation depends on conceptual framework as well as measurement methods. The latter are described in detail in Chapter 3 from 3.7 onwards, while conceptual and general aspects are dealt with in sections 3.1 - 3.6.

3.1.2 In the NNA, **the production approach is the main approach** to estimating GDP. In Norway, **production accounts** have traditionally been compiled in a detailed way based on establishment or local KAUs production data. Since the 1995 main revision, production accounts have been also established for production with basis as institutional units.

Use of administrative registers in statistics in Norway

3.1.3 Statistics Norway (SN) uses three administrative registers as **base registers** for the production of statistics. The base registers are:

- The Central Coordinating Register for Legal Entities (CCRLE, owned by the *Brønnøysund* Register Centre, a government body)
- The Cadastre (ground properties, addresses, buildings and dwellings, owned by the Mapping Authority)
- The Central Population Register (CPR, owned by the Tax Directorate)

3.1.4 To facilitate the statistical use of these registers, Statistics Norway has established an integrated database solution for the statistical versions of the base registers. The statistical database solution includes:

- The Business Register (BR, businesses/Local Kind of Activity Units and enterprises, based on the CCRLE)
- The Statistical Cadastre (SC, based on the Cadastre)
- The Statistical Population Register (SPR, based on the CPR)

3.1.5 The databases are **updated daily** from the administrative sources. They are supplemented with information from other sources. Examples of the supplementations are aggregated information on employment added to businesses in the BR, and information on jobs to persons in the SPR. The solution allows for data inspection at micro level, browsing from one database to the other, and extraction of combined data from different sources. The **personal identification number** (PIN), the **business identification number** (BIN), and the numerical address are used as keys for linkage. Managing the databases for statistical purposes is called statistical population management at Statistics Norway. In addition to the base registers, Statistics Norway uses a variety of other administrative sources. Some of them are well established in the statistical system. An example is employment

statistics which is based on the Register on Employers and Employees, the Register of Personal Taxpayers, and several other sources. Another example is income statistics which is based on data from tax returns, the Tax Register, the End of the Year Certificate Register and several other sources. It goes without saying that these and many other statistics are produced in combination with data from the base registers.

3.1.6 Statistics Norway is constantly adding **new administrative sources** to the statistical system. The sources keep track of units (persons, international concern, enterprises, businesses, dwellings etc.) by means of an identification number (PIN for person and BIN for business) and/or address. They are being used to fill out missing values, to analyse and correct over- and under-coverage, and to reduce inconsistency or simply to add new data to the base registers. Some examples of relative new sources are:

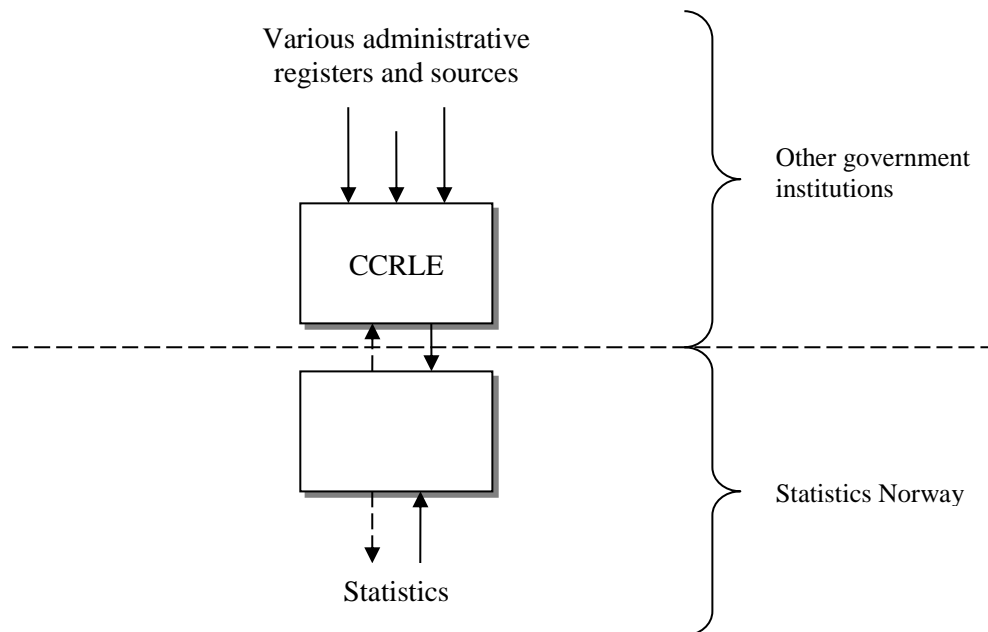
- Euro Group Register (EGR)
- The Taxation Property Register (SERG) from the Tax Authorities
- Homes for sale in Finn.no (a commercial advertising service on the internet)
- Service Based Personal Data System from the Norwegian Labor and Welfare Administration (NAV)
- The Register on Licensees from the Norwegian National Broadcasting (NRK)
- The Common Register on Mail Recipients from Norway Post (*Posten Norge AS*)
- The Register on Customers from the State Educational Loan Fund (*Lånekassen*)
- The National Digital Contact Register from the Agency for Public Management and eGovernment (Difi)

3.1.7 The EGR is used to improve the **external dimension** in the Business Register. The quality of the Cadastre is improved by using information from SERG and Finn.no. Within social statistics, some of these sources are being used to improve contact rates, in order to reduce noncontact biases in interview surveys.

The Central Register of Establishments and Enterprises (CREE)

3.1.8 Statistics Norway's **Business Register - the Central Register of Establishments and Enterprises (CREE)** - is an important instrument of the Norwegian statistical system. It is most closely linked to the **Central Coordinating Register of Legal Entities (CCRLE)** which in turn is made up by all units obliged to register in any of several associated administrative registers. The CCRLE covers all legal entities conducting business activities, and at least all sole proprietorships trading goods or having more than five employees. The **Business Register** has a general cut-off threshold set at NOK 50 000 (EURO 5 000) in annual turnover, which is a relative low threshold. The cut-off is equal to the threshold of the VAT Register. All entities with a turnover above 50 000 (EURO 5 000) must file an accounting statement with the tax authorities which is the main source for National Accounts.

The Central Register of Establishments and Enterprises and its environment



3.1.9 The main purpose of the CREE is to serve as a tool for Statistics Norway in its production of statistics on economic activities. More precisely, the register shall supply

- Definitions and construction of statistical units
- Industry and sector classification of units
- Link to corresponding units in other administrative registers
- Tool for planning, running and coordinating statistical sample surveys
- Tool in production of industry-based statistics
- Source of information for analyses on enterprises and establishments

3.1.10 All information used for updating and maintaining the register is collected under the Statistical law. The main sources for updating CCRLE and thus CREE are the

- VAT Register
- Register of Employers
- Corporate Taxation Data Register
- County Governors' Register of Foundations
- Register of Stockholders
- Register of Business Enterprises

In addition, the CREE is updated with information obtained from the direct contact with the units, from studying annual accounts and reports from the Norwegian Register of Company Accounts, and

from the integrated monitor system for CREE itself. The frequency for updating varies from **daily** (CCRLE) through **weekly** (VAT-register) and **monthly** (Register of employees), to **annual** (Register on Stockholders).

3.1.11 The information on enterprises and establishments contained in the register can be classified into categories featured by:

- Unique identification codes (enterprise number, establishment number, organisation number)
- Descriptive characteristics (name, address, activity and sector codes, status, type of organisation, telephone/telefax number, e-mail address)
- Statistical variables on size (turn-over, employment, number of employees)

This information is used both for sampling purposes, dispatch of survey forms, and for the estimation of total values for the whole population.

3.1.12 The statistical variables are defined as follows. The number of **employees** comprises all persons that work for the employer more than 4 hours a week. In the existing stock of enterprises, the number of employees refers to the time of counting. For new enterprises, the number of employees refers to 1st January and 1st September the following year. For enterprise dropouts, the number of employees refers to 1st January of the year of dropout. Persons with more than one job may have been counted as employed in several industries. All employees and owners make up the **employment**. The figures show an average number of employees at the end of 5 selected months in the year and may deviate from what is published in the Labour Force Survey (*AKU*, short name in Norwegian) and the National Accounts, because sources and calculations of averages may differ. **Turnover** is defined as the sum of remuneration of sale to customers, sale of commercial goods, and gross income from other industry activities. The turnover includes rental income and commissions receivable, but not government transfers or holding gains (or losses) through sales of fixed assets. VAT is not included in the figures. For units in industries that are included in the SBS, the turnover is collected from these statistics. In other industries, the turnover is collected from administrative sources (VAT or annual accounts).

3.1.13 The statistical units defined and covered in the CREE are

- legal unit,
- enterprise group (concern),
- enterprise,
- local unit,
- kind-of-activity unit (KAU) and
- local kind-of activity unit (LKAU)
- auxiliary unit

The basis for creating the statistical units is legal unit. Examples of legal units are limited companies, sole proprietorship and general partnership. In most cases, an **enterprise** will be identical with a sole legal unit, e.g., a limited company. In addition to genuine legal units, the CREE comprises other types

of organization that are treated as enterprise units. Among those we find other legal person and securities fund. The local KAU is equivalent to the definition of **establishment** in NACE. The establishment unit in CREE is defined as a LKAU. The main rule is that minimum one establishment is recorded for each enterprise unit. If an enterprise conducts activities on different locations, an establishment is constructed for each separate geographical address, on the condition that at least one person has its permanent workplace at the address. If an enterprise conducts different activities on one and the same address, an establishment is constructed for each separate type of activity on the condition that 5 or more persons are employed. Within manufacturing activities, the corresponding condition is 10 or more persons employed. A special mention should be made of establishments within oil and gas extraction, where each single petroleum field is pointed out as one establishment. Finally, among some special **technical support units**, each single vessel operated by domestic shipping companies is identified but is not defined as establishment. The same is true for unmanned gas stations and tourist accommodations.

3.1.14 Enterprise groups will per definition consist of a mother enterprise unit and minimum one daughter company, where the mother has ownership to at least 50 per cent of the daughter company. The enterprise groups are registered in a separate database in CREE. In addition to resident enterprise units, non-resident enterprises (daughter companies, mother companies) that are part of an inter- or multinational enterprise group involving Norwegian units are also registered. This information is of high importance, in particular for the design of sample surveys on cross-border economic relations.

3.1.15 Activity coding is done according to the Norwegian Standard Industrial Classification (SIC 2007), which in turn is based on the European industrial classification NACE rev.2. Of importance to the NNA is that both the enterprise type of units and the establishment units are given unique activity codes. A special mention should be made for the **double activity codes** given to **auxiliary units**, reflecting both their own genuine activity and the activity of the mother unit. Also, units within some specific industries are for various reasons given a double set of activity codes (primary industries, ocean transport, trade, health, education).

3.1.16 The following table shows the number of enterprises and establishments within each main industry in 2019.

Number of enterprises and establishments within each main industry. 2019.

<i>SIC 2007</i>	<i>Activity</i>	<i>Number of enterprises</i>	<i>Number of establishments</i>
	All industries	423062	581956
A	Agriculture, forestry and fishing	0	66661
B	Mining and quarrying	1176	1615
C	Manufacture	17677	21122
D	Electricity, gas and steam	1298	1774
E	Water supply, sewerage, waste	1332	2291
F	Construction	60081	67908
G	Wholesale and retail trade: repair of motor vehicles and motorcycles	50654	71541
H	Transportation and storage	20759	25250
I	Accommodation and food service activities	12451	16319
J	Information and communication	18795	23023
K	Financial and insurance activities	20782	4453
L	Real estate activities	51343	59760
M	Professional, scientific and technical activities	52204	61730
N	Administrative and support service activities	21807	28040
O	Public administration and defense: compulsory social security	0	5252
P	Education	12994	18834
Q	Human health and social work activities	35386	54871
R	Arts, entertainment and recreation	25669	27624
S	Personal service activities	16480	22523
T	Households as employers activities	17	17
U	Extraterritorial organisations and bodies	1	8
	Unspecified	2156	1340

3.1.17 The categorization of units into **institutional sectors** is based upon the principles and definitions of ESA 2010, although the codes themselves include some adaptations for national purposes. The sector coding of the units is initially effectuated by the CCRLE using detailed rules set up by Statistics Norway. Units are given **institutional sector codes** according to their organisational form, activity code and ownership. Control routines for checking the sector coding are run continuously by Statistics Norway and deviations from the rules are handled explicitly. In most cases, the categorization of units into institutional sectors are straightforward. Borderline cases are decided upon by using the decision tree laid down in ESA 2010 § 2.34.

3.1.18 A new enterprise will normally be registered in the CREE through its own application for registering in the CCRLE (or another connected register), motivated by the need of an **organisational number** which is widely used in the Norwegian society for identification of legal entities, for

example, the number is obligatory when opening bank accounts. To perform practically any economic activity, a bank account in Norway is needed. To be able to open a bank account, a business or personal identity number (BIN or PIN) is required, and the only way to obtain such a number is by registration in the CCRLE or one of its affiliated registers. When a new enterprise is registered, normally a corresponding establishment is automatically registered, which is subsequently subject to a closer investigation based on a set of specific rules (decision tree).

3.1.19 All establishment and enterprise units are given a set of dates reflecting actual start-up, close-down or reactivating. To keep track of changes and corrections, all characteristics of a unit are given both a date of validity and a date of registration. A discontinuance of an activity is counted as a **dropout**. This may happen if for example the establishment linked to the enterprise is sold or close-down. Dropouts in year t are counted as dropouts among enterprises active by 1st January in year t . All enterprises that are close-down or sell their establishment are considered enterprise dropouts. If all of the establishment is close-down, and is not taken over by another enterprise, the dropout is also classified as a **closure**.

3.1.20 In most cases, classification of units is rather straightforward, but in some cases, it is difficult to decide whether an entity is to be counted as a statistical unit at all, and if it is counted, it is still not easy to allocate the unit to the relevant and correct sector and industry. In particular, how to deal with so-called **Special Purpose Entities (SPEs)** can be problematic in this respect. An important aspect of this work is related to the definition of the non-financial sector versus the financial sector, to which the question of how to classify SPEs is raised. This work is a continuing process and cannot be viewed as finalised, since the international guidelines are still evolving. It is important to note that so far it has not been the intention to identify and categorize SPEs as a separate group of units as such. On the other hand, they cannot be left out either, because the identification and categorisation might be of use as a tool in ensuring a correct treatment of these special units in the future.

3.1.21 The SPEs in the **financial sector** (ownership of financial assets) are identified in the process of controlling and assessing the units in the CREE as part of the statistical production process. When checks indicate a SPE, the printed annual financial report from the unit is looked up (electronically) before final decision of status of the unit is taken. The SPEs in the financial sector are in the financial statistics all allocated to industry 64.308 or 64.202, depending on whether or not the enterprise has a non-resident parent or subsidiary and no other activity in the country. Both industries are reserved for SPEs exclusively. The following table shows the number and economic data of these units in the two industries that were identified as active and had income and employees in 2010 and 2011 respectively. The figures clearly show that the SPEs in the financial sector are insignificant to the Norwegian economy. In the national accounts, the accounting-based data for these units are included in the NA institutional sector 490 Financial auxiliaries and NA industry 23 660 Services incidental to finance and insurance both as output, costs and employment.

SPEs in financial sector S490.

<i>Industry</i>	<i>Year</i>	<i>Number of units</i>	<i>Income NOK million</i>	<i>Number of employees</i>
NACE 64.202	2010	22	3	25
NACE 64.308	2011	11 489	4 899	379

3.1.22 In the **non-financial sector**, the SPEs are not identified as a separate category. Most relevant however are the general rules for statistical treatment of units in the Structural Business Statistics (SBS), which is the data source for most industries in the national accounts. However, a few SPEs in the non-financial sector are identified and treated separately. These are units of type 11 in the EU classification, i.e., ticket offices of foreign airline companies located in Norway. They are characterised by high income (turn-over) compared to number of employees.

3.1.23 There are less than 20 units of this type active in Norway with less than 100 employees in total. Most of the turn-over of these units reflects the value of imports of air passenger transportation services and not domestic output.

3.1.24 Since 2002, Statistics Norway has published enterprise and establishment statistics (enterprise and establishment demography) based on the information contained in the CREE at: http://www.ssb.no/english/subjects/10/01/naeringsliv_en/.

On the quality of registers

3.1.25 The CREE is presently a comprehensive register and quality is ensured in relation to population and basic characteristics like addresses, legal form and industry codes. The quality of the population of active enterprises, including the quality regarding the industry code for establishments and enterprises, is secured by directly contacting units in connection with the data capture for the SBS, through links towards administrative registers in the monitoring system for establishments in the CREE and by using company statements on the purpose of their activity.

3.1.26 The three C's of register-based statistics are ***Co-operation, Communication and Coordination***. They contribute significantly to improved quality in register-based statistics. Improvements can be achieved by several types of co-operation between Statistics Norway and register owners. In general, three approaches are applied: two types of **agreements**, respectively on data processing and co-operation, and the third approach is through the **forums for co-operation** between Statistics Norway and register users. Common for all the types of co-operation is that they have a **sound legal basis**. In addition, they all have strong elements of communication and coordination within Statistics Norway, between Statistics Norway and register owners, and indeed, among register owners.

3.1.27 Special forums for co-operation between Statistics Norway and register owners have been established and Statistics Norway is very active in the Co-operation Forum and the User Forum for the CCRLE. The **legal basis** for this type of co-operation is the Statistics Act. In 2021, a new Statistics Act replaced the former one from 1989. Even though the fundamental principles are the same, the new act gives Statistics Norway responsibility of all official statistics and even wider authority for the collection of data.

Statistics Act of 2021

Section 10. Duty to provide information

(1) Without being bound by an obligation of secrecy, any person must provide the data that are necessary to develop, produce or disseminate official statistics if so ordered by Statistics Norway. The obligation includes data on the party with a duty to report, and other data for which the party has a right of disposal. A deadline may be set for the provision of data. The obligation of secrecy stipulated in section 119, first and second subsections, of the Criminal Procedure Act and section 22-5, first subsection, of the Dispute Act shall take precedence over the duty to provide information pursuant to the first sentence.

(2) Statistics Norway may issue regulations relating to the duty to provide information and may impose a duty to provide information on a case by case basis.

(3) A party may refuse to provide data pursuant to the first subsection when an exception is necessary out of consideration for national defence and security interests or the crime-fighting activities of the police.

(4) Statistics Norway may stipulate the way in which the data are provided and the documentation that shall accompany them. Remuneration cannot be requested for the costs associated with complying with the duty to provide information.

(5) Statistics Norway shall not make a decision to impose a duty to provide information until an assessment has been made of the benefit of obtaining the information, balanced against the costs incurred by the party with a duty to provide information and a determination of the extent to which the processing will impact on the data subject. . The assessment shall be made public.

(6) The Ministry may issue regulations relating to the duty to provide information pursuant to this provision, including in relation to limitations on the duty to provide information.

Section 11. Duty to notify Statistics Norway

(1) In order to ensure the quality of official statistics, Statistics Norway must be consulted before public authorities establish, amend or discontinue information systems in a way that may impact on the duty to provide information in section 10.

(2) Statistics Norway may procure additional data and submit proposals for the design of the information systems in order to serve statistical purposes.

In short, Statistics Norway has, both according to the former and the new statistics acts, the legal right to use registers and must be notified in cases when changes are planned in the source. These rights are being acknowledged by the register owners. The statistical act of 2021 also states that Statistics Norway should be consulted before public authorities changes information systems. In practice, when Statistics Norway wants to develop a new source for statistical purposes, it refers to § 3-2 and § 2-2 regarding the obligation to provide information.

3.1.28 The agreements between Statistics Norway and the register owners covers the following items:

1. General conditions
1.1. Background
1.2. Purpose
1.3. Appendixes to the agreement
1.3.1. Which registers are covered by the agreement
1.3.2. Contact persons for the day-to-day contact
1.3.3. A description of the quality improvements
1.3.4. Practical arrangements for transferring the register
1.3.5. Possible other issues
1.4. Duration
1.5. Legal basis for extradition of the data
2. Duties of the parties
2.1. General demands
2.2. The duties of Statistics Norway
2.2.1. Data quality
2.2.2. Quality reports from Statistics Norway
2.3. The duties of the register owner
2.3.1. Data quality
2.3.2. The duty to coordinate
3. Delivery of the data to SN
4. Meetings
5. Secrecy
6. Costs
7. Contact persons for the agreement

3.1.29 With regards to the CCRLE, Statistics Norway is in a special position. In the Act on the CCRLE, Statistics Norway's Business and Enterprise Register is specifically mentioned as one of the affiliated registers to the CCRLE.⁷ Furthermore, the act lists the variables which are being shared openly among all the affiliated registers. This facilitates the transfer of a limited range of individual based information from Statistics Norway to the CCRLE, not violating the conditions on confidentiality in the Statistics Act. Such information might come from a questionnaire, from a telephone conversation or some other sources.

⁷ The Statistics Act of 2021 also states that:

3. Act of 3 June 1994 No. 15 relating to the Central Coordinating Register for Legal Entities shall be amended as follows: Section 2 b (5) shall read as follows:

5. Statistics Norway's Norwegian Central Register of Establishments and Enterprises (section 10 of the Statistics Act).

3.1.30 To organize the data exchange between the CCRLE and the affiliated registers (including Statistics Norway's Business register) in practice, two bodies have been established:

- **The Co-operation Forum** – to facilitate the data production and exchange between the affiliated registers.

- **The User Forum** – a broader forum where a variety of users of the data from the CCRLE meet. Statistics Norway participates among other things to inform on new statistical use of the register.

Statistics Norway participates actively in both forums, as a member and occasionally as the chair. The participation from Statistics Norway is highly appreciated because statisticians tend to have the best general overview, and to have the skills, methods, tools and time for quality assessment and checks.

3.1.31 Statistics Norway has processed the **quality indicators** for administrative sources from Blue-Ets Work Package 4. This resulted in lists with quality checks for three administrative base registers, the Central Population Register (CPR), the Cadaster, and the Register for Legal Entities (CCRLE). The quality checks are run on a regular basis and summarized in **quality reports**. The quality reports give an overall view of the quality of each separate register and how it develops over time. The quality reports are in demand by the register owners and used as a tool for quality improvement by the owners of the administrative base registers.

3.1.32 The quality reports include the following items:

1. Purpose/background
2. Updating
3. Co-operation
4. Contact persons
 - 4.1. For the register owner
 - 4.2. For SN
5. General quality indicators (at unit and variable level, specific problems are highlighted)
 - 5.1. Technical checks
 - 5.2. Accuracy
 - 5.3. Completeness
 - 5.4. Time-related checks
 - 5.5. Integrability
6. Transfer of the register data to SN
7. Estimated number of hours used on
 - 7.1. Data capture
 - 7.2. Automatic micro checking and editing of the data
 - 7.3. Manual editing
8. Feedback at micro level
9. Feedback from matched data, at aggregated level
10. Proposals for other types of feedback
11. Proposals for quality control at the source by the register owner
12. Proposals for other measures which will improve register quality
13. Proposals for other measures which will improve co-operation on register quality
14. What can be done to simplify reporting from respondents to the administrative register, to reduce response burden
15. Proposals for further development of the register content

Statistical sources

3.1.33 The following table lists the main statistical sources for each NACE section. For most industries, **annual SBS** are available and used. In the SBS all active units, i.e., units with 1 or more employees, or units reporting to the VAT register or reporting accounting revenue above NOK 50 000 (Euro 5 000) are included in the SBS population and thus included in the national accounts. There is a cut-off of NOK 1 000 000 (Euro 100 000) in annual turnover for inclusion in the sample population used for estimating detailed variables for the whole population. Where other sources than the SBS are used, either alone or as support to the SBS, the type and frequency of the statistical information are stated.

Statistical sources by industry. Type and frequency.

<i>NACE</i>	<i>SBS (annual)</i>	<i>Other sources</i>	<i>Comments on other sources</i>
A		X	Aggregate account of agriculture (annual) Aggregate account of forestry (annual) Fishing catch statistics (annual) Census data of fish farming (annual) Cost surveys of fishing boats and of fish farming (annual)
B	X	X	Oil and gas activity census (annual)
C	X		
D	X	X	Electricity statistics (annual)
E	X	X	Local government accounts (annual)
F	X		
G	X	X	Sample surveys on trade margins (periodic)
H	X	X	Pipeline transport activity statistics (annual) Business Accounts SAS (Scandinavian Air System)
I	X		
J	X		
K		X	Credit market census (annual) Interest Statistics (FISIM)
L	X	X	Housing statistics of various kinds (annual) Household budget surveys (periodic) Surveys on actual rents (annual)
M	X	X	Central government accounts (annual)
N	X		
O		X	Central and local government accounts (annual) KOSTRA (annual)
P		X	Central and local government accounts (annual) Accounting statistics for NPISHs (annual)
Q		X	Central and local government accounts (annual) Accounting statistics health institutions(annual) Social statistics (annual)
R		X	Central and local government accounts (annual) Business register data (annual) Cultural statistics (annual)
S	X	X	Central and local government accounts (annual) Statistics membership organisations (annual)
T		X	Register of jobs, remuneration, social benefits and taxes paid (<i>A-melding</i> in Norwegian)

3.1.34 As stated in paragraph 1.1.1, GDP is in the NNA calculated within the annual detailed SUT. It is however also important to note that the institutional dimension, i.e., value added etc. by institutional

sector, to a large degree is incorporated in the SUT. There are two reasons for this. First, from a historical perspective, a commodity flow system or the SUT was in Norway developed prior to a full system of sector accounts. In this situation, there was an analytical need to separate government activities from non-government activities. The other reason was that it was regarded as a necessity for the SUT to be able to split between market and non-market activities, in particular, due to the definitional differences in the methods for output estimation. This means that in many areas the sources used for calculating value added by industries (SUT) are the same as for compiling institutional sector accounts. One example is government account, another is household consumption expenditures, and a third is financial enterprises. Another example is non-financial enterprises where the SBS broken down by industry and used in the SUT are based on the same accounting statistics used as a main source for the institutional sector non-financial enterprises.

3.1.35 The following table lists the main statistical sources for each institutional sector.

Statistical sources by institutional sectors. Type and frequency.

<i>Sectors</i>	<i>Main sources</i>
S.11 Non-financial corporations	Accounting statistics (annual)
S.12 Financial corporations	Credit market census (quarterly and annual)
S.13 General government	Central and local government accounts (quarterly and annual) KOSTRA (annual)
S.14 Households	Income and wealth statistics (annual) Counterpart data (quarterly and annual) SUT (quarterly and annual)
S.15 NPISHs	Accounting statistics (annual)
S.2 Rest of the World	External trade in goods statistics (quarterly and annual) External trade in services statistics (quarterly) Non-financial enterprises external transactions (quarterly and annual) Financial enterprises' external transactions (quarterly and annual)

3.2 Borderline cases

3.2.1 Considering the production account, the estimation of output and intermediate consumption of goods and services in the production process gives rise to a set of questions as regards how to ensure the correct treatment of borderline cases. In this sub-chapter, the most relevant borderline cases to the Norwegian national accounts are discussed.

3.2.2 **Production boundary** in the NNA is defined in accordance with the international standards, and it includes production of individual and collective services by government, own-account production of housing services by owner-occupiers, production of goods for own final consumption, and production of services by paid domestic staff. In principle, it also includes the production forbidden by law, and that from which the revenues are not declared to the fiscal authorities.

3.2.3 **Production for own final use** includes production, storage and processing of agricultural products for own-account by households, also those from forestry and fishing. Likewise, own-account production of capital goods includes construction of dwellings by households and software, literary

and artistic originals, and mineral exploration under the heading of production. Most important item produced for own final use is no doubt production of dwelling services. Also of importance is construction. Other production for own use, such as mineral exploration and software is covered through separate products, but not distinguished as separate type of producer. Breeding of fish in fish farms should also be mentioned here, which is quite important in Norway. In private households with employed persons (industry P), output is estimated from a benchmark figure and extrapolated by use of data from the Households' budget surveys.

3.2.4 **Mineral extraction** is in Norway by far dominated by the oil and gas extraction industry compared to other mining industries. For instance, in 2019 fixed capital formation in the oil and gas extraction industry constitutes almost 20 per cent of total fixed capital formation in Norway, while for other mining industries, it constitutes 0.2 per cent only, and own account mineral exploration is quite negligible. In oil and gas extraction, the data on own account expenditures on mineral exploration are collected through the quarterly oil and gas investments census (all units are covered) as a separate item on the questionnaire.

3.2.5 **Volunteer activities** covered by the NNA include part of abovementioned construction of dwellings and some structures of sports, but hardly more goods. The estimates comprise the own account GFCF in the industry sporting activities and other recreational activities of NPISH. These investments reflect volunteering work. Traditionally, support for construction of sport arenas requires a substantial contribution from own resources of the receivers, which could include an estimated value of volunteering work. The actual estimate has been extrapolated from the value of production in the base year. Products created in social work activities by disabled workers (part of social work production, earlier classified as manufactured goods and output) belong to another category.

3.2.6 Reference to the framework of production also implies a need for clarifying some issues of **intermediate consumption**. Principles applied to sort out borderline problems follow the international rules of ESA 2010, at least conceptually. Examples could be costs of production for non-life insurance according to service charge, and operating leasing having a split between operating and financial leasing. Less articulated but still covered are costs from use of patented entities and trademarks, but this area should be better explored.

3.2.7 **Borderline issues** between intermediate consumption and other categories of use, i.e., intermediate use versus final use, are discussed elsewhere in the inventory (see section 5.2). Based on data available, it may not always be easy to apply the distinction between small tools and devices that are to be recorded as intermediate consumption, and those which are to be recorded as gross fixed capital formation. Bias towards too much intermediate consumption is more likely generated than not.

3.2.8 The estimation of GDP according to the production approach is in Norway based on statistics in which the local kind of activity unit (local KAU) is the basic unit. Goods and services received **from another local KAU within the same enterprise** are in general included and comply with the definition of intermediate consumption. At least, this treatment applies in the manufacturing area. The opposite treatment goes for intermediate flows within the same local KAU.

3.2.9 Domestic and personal services produced and consumed within the same household fall outside the production boundary. Statistics Norway has on several occasions, however, made estimates of such services in the context of **household satellite accounts**.

3.2.10 Work-in-progress is calculated for industry B and C -. Natural growth of produced forest is calculated as change in inventory as the difference between standing m^3 of forest on 1st January year T and standing m^3 on 1st January year T-1 multiplied by average price indexes for timber. See 3.7.18 for more details. Also, natural growth of production animal is calculated as change in inventory, the same goes for natural growth or work-in-progress of fish in fish farms, see 3.7.6 for more details.

3.2.11 As explained in 5.11.2, work in progress on modules for oil production platforms and offshore production structures and movable exploration and drilling rigs is treated as gross fixed capital formation in the NNA. However, work in progress on ships still is treated as changes in inventories, the reason for which is partly practical considerations in treating discrepancies against exports in external trade statistics, partly due to circumstances where contracts for purchase/sale may not be finally settled (tradable contracts and the like).

3.3 Valuation

3.3.1 Valuation is primarily a topic on how to **measure product flows**, i.e., prices to be applied in the various circumstances in which transactions in goods and services occur. Different kinds of transactors, most notably producers, importers, exporters, and purchasers including consumers and investors, face different prices. Transactions and concepts of the national accounts correspond to these various transactors, i.e., output, imports, exports, other uses including consumption and capital formation.

3.3.2 In the NNA - following the ESA 2010 principles, output is valued or measured, or more precisely **presented**, in basic prices. In the NNA, **flexible valuation** is built into the operating systems, enabling publication of output values in either basic prices or producers' prices. Once output valuation is determined, the valuation of value added follows accordingly. In the NNA, therefore, value added of an industry is in basic prices when output is in basic prices. Other non-market output is valued at total costs of production as the sum of intermediate consumption, compensation of employees and consumption of fixed capital (the two additional items of other taxes on production less other subsidies on production are involved with insignificant values only).

3.3.3 According to ESA 2010, **output** is to be valued in **basic prices**, with specific conventions for the valuation of other **non-market output at total costs of production** (minus sales if market production is involved as well).

3.3.4 Output at **basic prices in market production** is extracted directly from the source data used for all industries based on the SBS, i.e., the Directorate of Taxes' Income Statements - for short **NO** (*NæringsOppgave* in Norwegian). Here, item NO3000 Sales of goods and services (see table in paragraph 3.4.7) includes special taxes and subsidies (excluding VAT). However, item NO3300 reports the value of those special taxes and subsidies included in item NO3000, and they can thus be subtracted from NO3000 to reach the basic value of the sales value used as source input to the SUT.

3.3.5 **Output for own final use** valued in basic prices (of similar products sold in market) may be difficult to apply. Own account GFCF are calculated on basis of cost, while household production for own consumption is valued at basic prices based on prices of similar products sold in the market. Procedures for valuing **work-in-progress** - mostly relevant for quarterly national accounts - are difficult to apply in the recommended detailed way, considering the overall residual type of estimated changes in inventories in the NNA. However, additions to work-in-progress are valued in proportion to the estimated current basic price of the finished product, with the exceptions of work-in-progress in fish farming and cultivated forests, where a substantial part to the production comes when the ripe product is withdrawn from storage and processed to be sold. These costs are costs for slaughtering and packaging in the case of farmed fish and the cutting of timber in the case of cultivated forests. Similarly, the residual character of **trade margins** may find adjustments to exclude gains and losses from trade margins quite redundant in context of output being accumulated from product flows. Another problematic area is to sort out market production from predominantly non-market production, an area that may need some more refined treatment in the future.

3.3.6 In the following table, products that represent **output for own final use** are shown. In the column Estimation method, 1= market price of similar product and 2 = costs plus mark-up.

Products for own final uses. Estimation methods.

<i>Code</i>	<i>Text</i>	<i>Estimation method</i>
<i>General</i>		
000382	Own account investments in machinery	1
000383	Own account investments in construction	1
000385	Own account investments in IT-software	1
000386	Own account investments in non-financial, non-produced assets	1
000387	Own account investments in R&D	2
000389	Own account investments in in local Government	2 ⁸
<i>Industry specific</i>		
011309	Fresh vegetables, own use	1
011359	Potatoes etc., own use	1
012409	Berries, fruit, own use	1
014129	Raw milk, own use	1
014729	Eggs, own use	1
019019/39	Changes in livestock	1
019048	Changes in stocks, fruit trees	1
019118	Own account investment agriculture, land improvement	1
019128	Own account investment agriculture, machinery	1
019138	Own account investment agriculture, buildings and constructions	1
021020	Own account investment, forest culture	2
022049	Wood fuel, own use	1
029118	Own account construction forestry	2
031169	Fish for own use	1
060058	Own account construction, oil and gas extraction	1
351908	Own account investment electricity, machinery	1
351918	Own account investment electricity, constructions	1
410008	Own account investment households	2
490008	Own account investment, railways	1
931008	Own account investment, sports	2

3.3.7 **Treatment of taxes and subsidies on production** is important in the context of valuation. Taxes and subsidies on production are both subdivided into two categories, one related to product flows and termed taxes on products and subsidies on products, and the remaining part not related to products flows and termed other taxes on production and other subsidies on production, respectively. Naturally, it is the part related to product flows that is relevant for the valuation of specific product flows.

3.3.8 **VAT treatment** is an important part of the treatment of taxes on products. Following the **net treatment** of VAT in national accounts, only non-deductible VAT flows are recorded. As far as output valuation is concerned, net VAT treatment means no VAT is recorded in output if valuation is in either basic price or producer's price. As long as gross treatment of VAT was practiced (until the mid-1980s), VAT was included in output in producers' prices. Later, when net treatment of VAT was introduced, output in producers' prices is measured without any VAT.

⁸ Without mark-up.

3.3.9 Accrual principle also applies to taxes and subsidies on products. VAT is by far the largest tax on products and the theoretical value by product flows is estimated based on the detailed SUT. The theoretical value is adjusted to match actual VAT recorded as receipts in the government accounts. In the **central government accounts**, taxes are usually recorded on **cash basis** (actual receipts), and accruals values are normally estimated from the following standard rule (time lag of 1 month):

accruals value in period t = value of receipts in period t from February to January t+1

It presupposes that actual receipts are known on a monthly basis and that taxes are paid when due. In some cases, accruals values are **known from direct sources**. In other cases - lacking the necessary information - accruals value is set **equal to actual receipts**, by convention.

3.3.10 Clarifications on applying **intermediate consumption** valued in purchasers' prices in the NNA might be given as well. Intermediate consumption is recorded and valued when the goods and services enter the production process (when used rather than purchased) according to principles asked for when submitting primary data. According to the **Norwegian accounting standards**, and on which the source data in the NO are based, the costs represent the value of the goods and services consumed in the production of the output and not the value of goods and services purchased in the period. Again - like for output - the NNA treatment of changes in inventories does not meet the ESA 2010 recommendations for detailed and consistent valuation in that respect.

3.4 Transition from private accounting and administrative concepts to ESA 2010 national accounting concepts

3.4.1 Compiling the NA production accounts - and other parts of the NA as well - involves **extensive use of accounting data in the production statistics**. This is evidenced by a significant move towards structural business statistics when adapting to the EU regulations on Structural Business Statistics (**SBS**). The annual accounts of multinational enterprises separate activities in Norway from those abroad. Nationally, the statistics are based on Directorate of Taxes' Income Statements - for short **NO** - from which the items have conceptually been selected for direct use in compiling the various NA items.

3.4.2 Everyone who conducts business is obliged to submit the NO for the enterprise together with the tax return. To put it simple, the NO is a statement of the main items in the enterprise's profit and loss account and balance sheet based on the accounting rules of **International Financial Reporting Standards (IFRS)** or the **Norwegian accounting standards**. Those obliged to submit annual accounts complete 'Income Statement 2', while others are required to submit the simpler 'Income Statement 1'. If considered small enterprises, sole proprietors and general partnerships may choose to prepare accounts according to the rules for 'limited accounting obligation' and submit 'Income Statement 5'. Income statement 1 and 5 will show a profit or loss to be entered in the person or enterprise's tax return like any other taxable income and deductible costs. Businesses assessed as partnerships enter the profit/loss in their partnership statement. Some sole proprietors may be exempt from the requirement to submit an income statement if their sales during the income year does not exceed NOK 50 000.

The NA figures are adjusted for changes in lease treatments in IFRS 16 in the business accounts. The NA continues to follow the principle of economic ownership in ESA 2010. Capitalized operational leases are not included in gross fixed capital formation, and intermediate consumption of rental services are adjusted upwards to include operational leases.

3.4.3 The accounting obligation applies to the following enterprises:

- All limited companies (AS) and public limited companies (ASA)
- General partnerships (ANS/DA) and other businesses assessed as partnerships, provided that they meet one of the following criteria:
 - sales revenues of NOK 5 million or more
 - average number of employees corresponding to more than five full-time equivalents, or
 - five or more employees, or
 - some of the partners are legal entities with limited liability.
- Any sole proprietor who during the year as a whole had assets worth more than NOK 20 million or employed an average of more than 20 full-time equivalents.
- Cooperative societies and economic interest groups with revenues of more than NOK 2 million.
- Other associations that during the year had assets worth more than NOK 20 million or employed an average of more than 20 full-time equivalents.
- Housing cooperatives, housing associations and jointly owned properties with a certain number of units (pursuant to Section 44 of the Property Unit Ownership Act).
- Foundations
- Other entities with an accounting obligation pursuant to special provisions or by law.
- Foreign enterprises engaged in or participating in activity in Norway or on the Norwegian continental shelf and that are liable for tax in Norway pursuant to domestic Norwegian legislation.
- Sole proprietaries and general partnerships (ANS/DA) where none of the partners are legal entities with limited liability have 'limited accounting obligation' if two of the following conditions are met: sales revenue is less than NOK 70 million, assets is less than NOK 35 million, average numbers of employees is less than 50. These entities can choose to prepare annual accounts based on the tax reporting.

3.4.4 As regards size limits, the accounting obligation is triggered when the limit is exceeded in two consecutive years. Once an enterprise has become subject to the accounting obligation, it must be below the limit for two consecutive years for the obligation to lapse. The accounting obligation exists for all entities under the supervision of the Financial Supervisory Authority of Norway, regardless of form of incorporation. This applies to auditors, accountants and estate agents, among others.

3.4.5 The NO items used for the NA compilation of output and intermediate consumption are indicated by codes and text below. There is also a supplementary scheme or form (*Tilleggs Skjema* in Norwegian) - for short: **TS, which is local KAU-based** - that **supports** the NA compilation by industry based on **enterprise-based NO**. The supplementary questionnaire (TS) collects information about income, costs, and investments (*Omsetning, Kostnader og Investeringer* in Norwegian).

3.4.6 Data according to the EU regulation on the SBS are based on enterprise accounting data and supplementary local KAUs data. For the NA compilation in Norway, supplementary data based on local KAUs, which are actually provided, are vital for compiling the detailed SUT.

3.4.7 **Output** at basic prices is defined by the total of the NO items that are listed below, and subsequently distributed by the NNA-products. That definition is applied for all industry output for which the SBS-based source is used. For the NNA, a distinction is further made between characteristic and non-characteristic production, while not used in the NO. In most industries and in particular services industries for which this kind of data is used, the **products specified** are generated from TS at finest level of NACE. Characteristic output is allocated to relevant characteristic products, while non-characteristic output is allocated as described in the table below.

Definition of output in basic prices from the NO and TS items

<i>Codes</i>	<i>Item description</i>	<i>Comments</i>
	<i>Characteristic output</i>	
NO 3000	Sales of goods and services, liable to VAT	
NO 3100	Sales of goods and services, free of VAT	
NO 3200	Sales of goods and services, not subject to VAT	
NO 3500	Unearned income	
NO 4295	Changes in stocks, finished goods and work in progress	Item for subtraction (1)
TS	Sales of goods for resale	Item for subtraction
NO 3300	Taxes on sales	Item for subtraction
	<i>Non-characteristic output</i>	
NO 3600	Income from rent property	Less 5 per cent for land; Product: 682 020
NO 3605	Income from rent property, subject to tax	
NO 3650	Income from rent, hunting rights and fishing rights	
NO 3695	Other income from rent	Products vary by industry
NO 3700	Income from commissions	Products vary by industry
NO 3900	Other operating income	Products vary by industry Includes sold R&D
NO 4995	Changes in stocks, own-account produced fixed assets	Item for subtraction (1); Products by type: 000 382 and 000 383
TS	Trade margins (sales less purchase of goods for resale)	Trade margin, not sales
TS	Own-account produced software	

(1) This NO item is recorded as “beginning stocks minus closing stocks”, so it has to be subtracted from sales to get output. It includes holding gains and losses.

3.4.8 Some special remarks on changes in stocks: the SBS data have not been used in this context so far - a project financed by Eurostat grants has however tried this out but failed to draw a final conclusion (see chapter 5.11). Furthermore, discrepancy problem occurs as information on intermediate consumption inventories is not received from the SBS. It should be noted that the SBS provides information on consumption rather than on purchases for intermediate consumption.

3.4.9 Key item "Other operating income" includes royalties, license income etc. Nothing in the guidance suggests holding gains or losses to be included. Furthermore, income from contract work should be included in NO 3000 or NO 3900, depending on whether this is part of ordinary sale or outside ordinary sale.

3.4.10 As seen from the table, information on **own-account produced Software** is also given from the SBS, collected from the supplementary form to the NO.

3.4.11 **Intermediate consumption** at purchasers' prices is defined by adding all the NO items that follow below, and subsequently distributed by NNA-products (see the various NACE sections below). Definition below is applied for all industry intermediate consumption for which the SBS-based source is used. NO items of intermediate consumption actually report consumption rather than purchases. Thus, no further adjustment for ESA is needed at this point, contrary to the needed adjustment from sales to output.

Definition of intermediate consumption in purchasers' prices from the NO and TS items

<i>Codes</i>	<i>Item description</i>	<i>Comments</i>
NO 4005	Cost of purchased goods (including change in stock of raw materials, semi-finished products, goods for resale)	
NO 4500	Sub-contracting costs etc.	
NO 4995	Change in stocks of own produced goods	If positive only
NO 5900	Other personal costs	Share applied: 10 per cent
NO 6100	Outgoing freight and forwarding costs	
NO 6200	Energy, fuel etc. related to production	
NO 6300	Expenses of rented property	Less 5 per cent for land
NO 6340	Lighting and heating	
NO 6395	Renovation, water etc.	
NO 6400	Rented fixed durable assets other than property	
NO 6500	Tools, equipment etc., not capitalized	Share applied: 98 per cent
NO 6600	Maintenance and repairs, buildings	Share applied: 95 per cent
NO 6695	Maintenance and repairs, other	
NO 6700	Miscellaneous external services (accounting etc.)	
NO 6995	Office accessories, telephone and postage	
NO 7000	Operation of transport equipment	
NO 7020	Maintenance and repairs, transport equipment	
NO 7040	Insurance and charges on transport equipment	NA concept applied; 50/50 shares insur/charges, calculated net insurance expenditure rate (14.905 for 2019)
NO 7080	Car expenses, use of private car in business	
NO 7098	Electronic communication, private use	Item for subtraction
NO 7099	Private use of business cars	
NO 7155	Traveling, subsistence and car allowances, obligated	Share applied: 75 per cent
NO 7165	Traveling, subsistence, car allowances, not obligated	Share applied: 75 per cent
NO 7295	Commission charges	
NO 7330	Selling, advertising and representative costs	
NO 7350	Representation costs, refundable	
NO 7370	Representation costs, other	
NO 7490	Subscription and gifts	

NO 7495	Subscription and gifts, refundable	
NO 7500	Insurance costs, net	NA concept applied; not insurance premiums (Calculated net insurance expenditure rate 29.81 for 2019)
NO 7565	Guarantee- and service costs	
NO 7600	Patent and license costs and royalties	
NO 7700	Other operating expenses	
TS	Purchases of goods for resale	Item for subtraction

3.4.12 It is noted that **some NO items** have been **split for more than one category of use**. Share applied for intermediate consumption has been indicated in the table. The shares are continuously evaluated, and some are updated for the NA calculation. There are obligated allowances in the case of NO 7155 (taxable part) and NO 7165 (non-taxable part). Borderline between intermediate consumption versus **investment** is relevant and estimated for NO 6500 with 98 per cent being treated as intermediate consumption, and NO 6600 with 5 per cent as renovation, i.e., renovating old buildings. **Major repairs and renovations** are treated as GFCF, and not as intermediate consumption. The tax and accounting rules are that major repairs and renovations are to be included along with GFCF, not with operating costs. In order to be exhaustive, we therefore reclassify 5 percent of NO 6600 as mentioned from operating costs to GFCF. Borderline between intermediate consumption versus **compensation of employees** is relevant and estimated for NO 5900 with 90 per cent being regarded as compensation of employees, while for NO 7155 and NO 7165, 25 per cent of each item is taken as compensation of employees.

3.4.13 NO item 6500 is balanced against TS items on purchases of IT hardware and purchases of **IT software**.

3.4.14 It should be noted that **FISIM** is added to the SBS-based estimated figures for intermediate consumption of each industry. The steps in estimating FISIM as input for each industry are the following. FISIM outputs are **first calculated by consuming sectors**, i.e., for non-financial corporations, general government and households, and for rest-of-the world in terms of exports and imports, on loans and deposits these sectors have with the financial corporations involved. Total FISIM for each sector is obtained by adding the two components FISIM on loans and FISIM on deposits. FISIM on loans is calculated by multiplying stock of loans by the difference between the rate of interest on loan and a chosen reference rate, while FISIM on deposits is calculated by multiplying stock of deposits by the difference between the reference rate and the rate of interest on deposits. Grand total FISIM is the sum over all sectors.

3.4.15 Next, **allocating of FISIM to industries** is done by using the **Eurostat method II**, i.e., using as distribution key the output of the respective industries. There is a link between institutional sectors and the respective categories of industries (types of producers). The output share of an industry is multiplied with total FISIM to arrive at each industry's use of FISIM.

3.4.16 Allocating FISIM **between intermediate consumption and final consumption** is not at all easy in the case of **households**. It is assumed that 15 per cent of mortgage loans are made for final consumption (85 per cent for intermediate consumption in owner-occupied dwellings). Non-mortgage loans are allocated to final consumption. This assumption is obviously rather sensitive for the estimation. For deposits, it is assumed that full allocation is made from NPISH sector to final consumption, and full allocation from household employers, corporations, etc. to intermediate consumption.

3.4.17 According to the Norwegian accounting standards, each **leasing** agreement has to be classified by the firm into either financial or operational leasing. Items under a financial lease should be entered on the balance sheet together with the associated debt, and all payments are financial transactions. If the guidance of the accounting standard is carried through, leasing should obey the ESA rules. All sorts of items should be included, but they are not specified by kind of asset or by industry of the owner. Items under a financial lease should be mentioned in the notes to the balance sheet.

3.4.18 **Small tools** and devices are not normally included in capital formation, and we try to correct the source figures, counting part of operating costs as GFCF. According to a well-known text-book on Norwegian accounting practice (Huneide et al: Årsregnskapet i teori og praksis, 2012), the limit found in the tax law for 2012 was NOK 15 000 (around 1 700 – 1 800 euro) for new objects.

3.4.19 Average service charges for two types of **insurance** (cars, and other) are estimated as a percentage of gross premiums for the non-life insurers. These average percentages are applied to the gross premiums for the users as stated in the SBS.

3.4.20 The introduction of **capitalized R&D** has had an impact on the use of the NO as basis for the NNA. Previously, expenditures on R&D were recorded as current expenditures, implying also that own account R&D was not taken into account as production. According to ESA 2010 both own account activities on R&D and purchased R&D are to be recorded as investments. **Production of R&D** services – both own account and for others - are for all relevant industries estimated in a separate NNA module. The estimations are based on several sources, in particular Statistics Norway's Statistics on Technology and innovation and the surveys conducted by the Nordic Institute for Studies in Innovation, Research and Education (NIFU). The value of the estimated output of own account produced R&D services in each industry is added to the total output values given by the various sources, including the NO based SBS. The income from R&D services rendered to others is included in NO 3900.

3.4.21 Expenditures on R&D are assumed part of the item NO 7700 'Other operating expenses'. The estimated value of purchased R&D services is for each industry subtracted from the value of the item NO 7700 when intermediate consumption is calculated, so that double accounting can be avoided.

3.5 The roles of direct and indirect estimation methods and of benchmark and extrapolations

3.5.1 The estimation in the NNA of output and intermediate consumption are based on **relevant statistics** that are almost exclusively **available on a current basis**, i.e., annually available data. The Structural business statistics (SBS) is the most important source for direct estimation methods in compiling the NA according to the production approach, see also summary table in chapter 1.3. In addition to the SBS, other important sources for direct estimation methods include government accounts, credit market statistics based on accounts from financial enterprises and oil- and gas statistics. For indirect estimation methods, meaning estimations not counted for as benchmarking and extrapolation methods, the most important sources are Aggregate account of agriculture, Catch statistics, Census data of fish farming, and Cost surveys for fishing boats and farms.

3.5.2 The following tables illustrate the situation for output, intermediate consumption and value added in 2019. The figures are based on the categorization of the Process table 2019, and Benchmarks, extrapolations and exhaustiveness are taken from the columns "Total Extrapolation + models" and "Total exhaustiveness". Direct and indirect estimations thus represent all other columns of the Process table.

Output. 2019.

<i>Method</i>	<i>NOK billion</i>	<i>Per cent</i>
Direct and indirect estimations	5 627.0	93.1
Benchmarks and, extrapolations and exhaustiveness	419.4	6.9
Total	6 046.4	100

Intermediate consumption. 2019.

<i>Method</i>	<i>NOK billion</i>	<i>Per cent</i>
Direct and indirect estimations	2 810.4	97.5
Benchmarks and, extrapolations and exhaustiveness	71.2	2.5
Total	2 881.6	100

Value added. 2019.

<i>Method</i>	<i>NOK billion</i>	<i>Per cent</i>
Direct and indirect estimations	2 816.7	89.0
Benchmarks and, extrapolations and exhaustiveness	348.2	11.0
Total	3 164.9	100

3.5.3 The **role of benchmarks and extrapolations** within the scope of the **production approach** in the current NNA compilation is **reflected in the above tables**. As shown, about **7 per cent of total output** and around **11 per cent of total value added** was estimated from sources that are not normally available on a current basis. In the Norwegian statistical system, economic statistics have been established with a high degree of annual regularity and based on the continuously updated Central register of Establishments and Enterprises. Benchmark figures and extrapolation are used in some industries not covered by the SBS or the SBS-like statistics. Such estimates can be found in the areas of household own account production for own use. Probably we should count estimation of dwellings services also in here. In industry group L Real estate, renting and business activity, a significant part of output is based on models, mainly due to the inclusion of services from owner-occupied dwellings. Then also production in NPISH, but with the exception of health and education institutions must be mentioned. Some smaller parts of market health and education (for instance driving schools) are, however, compiled using benchmarks/extrapolation. Further, there are areas of market production in NACE R and S, where some parts now are covered by the SBS, while some other activities use benchmark extrapolation. In addition, some minor items are compiled using benchmark extrapolation as part of exhaustiveness adjustments. This is the case for instance for production for own final use in market production within primary industries and accommodation services in market agriculture. The assumptions underlying extrapolations are reviewed at least in the occasional revisions. These revisions have been held about every 5 year, the last five being conducted in 2002, 2006, 2011, 2014, and 2019. Short-term statistics for quarterly national accounts and balance of payments are outside the scope in this respect. Typically, there has been no economic census since 1974, and not much use has been necessary to make from other censuses held every 10 years or so (like the population and housing

census, and agricultural and fishery censuses). The following table summarizes the use of extrapolation:

Extrapolation methods for industries.

<i>Industry section</i>	<i>Type of output</i>	<i>Benchmark</i>	<i>Indicators</i>
A	Potatoes, vegetables, fruit for own consumption	1995 main revision	Volume: no change Price: CPI
A	Fish for own consumption	1988	Volume: Follow the percentage change in the catch statistics, Price: CPI for fish
F	Own construction on dwellings	Time use survey 2000	Volume: no change Price: CFCF dwellings
L	Services from owner occupied dwellings	See chapter 3.18	See chapter 3.18
M	Veterinarian services pets	1995 main revision	Volume: number of veterinaries Price: CPI veterinarian services
P	Driving school services	1995 main revision	Volume: number of licenses Price: CPI education
R	Sport services (part of)	2002 main revision	Volume: various (number of members, passengers ski-lifts etc.) Value: HBS
S	Organizations services (part of)	2002 main revision (John Hopkins project)	Volume: number of members Price: membership fees

3.5.4 In one respect, **benchmark** has an important role to play, and that is when undertaking a **main revision**. It is usually both convenient and useful to establish revised levels for the NA estimates for a **benchmark year** in the first place, by selecting a year that is "normal" (avoiding year of extraordinary events), and in particular, with the best scope for possible use of sources available. Given the annual sources available, the role of **extrapolations** - in this respect and in general - is restricted to the main revision process only, and not to sources. It means that new levels obtained initially for the benchmark year are extrapolated to other years so that revised time series are being established, normally from the same quality of sources that have been introduced for the benchmark year.

3.6 The main approaches taken with respect to exhaustiveness

3.6.1 The single most important aspect of exhaustiveness in relation to production in the Norwegian NA is **defining population of producers** in the statistical sources. Here the **Central Register of Establishments and Enterprises (CREE)**, in particular, the procedures related to ensuring coverage and up-dating, is of vital importance. The main source of information for CREE is the Central Register of Legal Entities covering all legal entities conducting business activities, and all sole proprietorships trading goods or having more than five employees. Information from this administrative register is fed

into CREE on a **daily basis** if annual turn-over exceeds NOK 50 000 (= EURO 5 000), i.e., a relative low threshold. At the other end of the time scale, we find the Register of Stock-holders, supplying the CREE with annual information. The combination of rapid updating and low thresholds makes the CREE a solid basis for defining the populations for statistical surveys on economic activities. See more on the CREE in chapters 3.1.8 to 3.1.32.

3.6.2 In some cases, adjustments and improvements are made to the ordinary utilization of the main sources available. More specifically, this applies to production for own account, hotels and restaurants, transport and real estate (dwelling services). See more in chapter 7.

3.6.3 It should also be mentioned that Statistics Norway in 2011 published the results from a project on **illegal activities**, including estimates on value added in prostitution services and distribution of illegal drugs and smuggled spirits. This new information was introduced in the NNA first time in the main revision of 2011. For the subsequent years following the 2011 main revision, the figures for the illegal activities have been estimated by using available new information. In general, the levels, especially due to illegal drugs, will be checked upon more thoroughly in regard to the next main revisions of the national accounts.

3.6.4 The following table shows the specific **adjustments made for exhaustiveness** within the **production approach** for each industry section, broken down by type as presented in the Norwegian process table. For more details see chapter 7.

Adjustments for exhaustiveness by industry (GVA). 2019.

<i>NACE groups</i>	<i>NOK billion</i>			<i>Total per cent of GVA</i>
	N1	N2	N7	
A - Agriculture, forestry and fishing			-0.1	0.0
B - Mining and quarrying			-0.0	0.0
C - Manufacturing				
D - Electricity, gas, steam and hot water supply				
E - Water supply, sewerage, waste management and remediation				
F - Construction		11.8		0.4
G - Wholesale and retail trade, repair of motor vehicles and motorcycles				
H - Transport and storage	1.3		1.3	0.1
I - Accommodation and food service activities	4.9		1.3	0.2
J - Information and communication				
K - Financial and insurance activities				
L - Real estate activities				
M - Professional, scientific and technical services				
N - Administrative and support service activities				
O - Public administration and defence, compulsory social security				
P - Education				
Q - Health and social work				
R - Arts, entertainment and recreation				
S - Other services	3.6	0.1		0.1
T - Private households with employed persons				
Total	9.8	11.9	2.5	0.8

3.7 Agriculture, forestry and fishing (A)

Contents

3.7.1 In the NNA, the activities of NACE A are **distinguished by 6 industries** within the three A64 headings:

01	Crop and animal production, hunting and related service activities		
010	Agriculture	M	O
016	Agricultural and animal husbandry service activities	M	
02	Forestry, logging and related service activities		
020	Forestry and logging	M	
024	Forestry and logging related service activities	M	
03	Fishing and aquaculture		
031	Fishing	M	O
032	Aquaculture	M	

3.7.2 Apart from **market producers** (denoted by M), **producers for own final use** (O) add to the market part of agricultural production and the hunting industry. There are no professional hunters in Norway, i.e., no employed persons, although hunters need to register for free-time activities in this field (for own final use). Products for own final consumption are however produced in both agricultural industries (M and O), i.e., among products of the market producers, and products of garden production outside farms etc. Picking of mushrooms and wild berries are included here. Agriculture NACE 3-digit industries are not approached, neither into crops and animals nor an additional mixed farming industry.

3.7.3 Fishing is an important industry in Norway, especially along the coastline of Northern and Western Norway with long fishery traditions. In more recent decades, fish hatcheries and fish farms have been rapidly developed to become one of the fast-growing industries in Norway. Fish hatcheries and fish farms therefore constitute a separate industry distinguished from traditional fishing. For the latter - like in agriculture - production for own final consumption (O) has been separated from the rest (M). Fishing in inland water - such as salmon fishing in rivers - is included here (part O) since own-account fishing of this kind is quantitatively important in relation to total supply of salmon, trout and the like in Norway.

3.7.4 Agriculture, hunting, forestry and fishing make a **contribution of 1.8 per cent to GDP** in 2019. Value added share of output is 41.2 per cent in 2019, well below the share of total value added to total output (52.3 per cent).

NACE A - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE A VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GN I</i>
01	Crop and animal production, hunting and related service activities	39.0	23.7	15.4	23.4	0.5	0.4	0.4
02	Forestry and logging	10.8	3.6	7.2	11.0	0.2	0.2	0.2
03	Fishing	22.3	6.8	15.5	23.6	0.5	0.4	0.4
03	Aquaculture	87.3	59.7	27.6	42.0	0.9	0.8	0.8
NACE A		159.4	93.8	65.7	100.0	2.1	1.8	1.8

3.7.5 Agriculture is defined according to the **national farm principle**, implying that internal deliveries between crop and livestock production are consolidated in the NNA. The ESA 2010 rules on the national farm principle and other EU guidelines are followed in the main source which is the Budgeting Committee for Agriculture (BCA), a Norwegian equivalent to EEA (Economic Accounts for Agriculture).

3.7.6 The principle of recording output continuously as "**work-in-progress**" from a process of production that takes a long time to complete seems relevant in fish farming when **breeding smolt (young salmon) for later slaughtering**. In the NNA, therefore, output includes an estimate of change in inventory, i.e., "work-in-progress", of smolt - in practice estimated as changes in inventory of smolt, salmon and trout in fish farming units. The fish farming industry has fish living in their production sites from the young smolt until they are grown ready for slaughter. The data for changes in this type of inventories is collected in the Directorate of fishing from every production site (census). The data show the number of fish by age class and their weight. The price per kg is taken from the sales prices for the live fish according to fishery statistics but reduced by 15 per cent. This reduction is supposed to show costs borne at the end of the production process, when the fish is slaughtered and packaged (and some are frozen as well). Changes in inventories might turn out to be either positive or negative. The estimation of **natural growth of cultivated forests** is also to be mentioned here (see paragraph 3.7.18).

3.7.7 **Main sources used** are:

- Aggregate account of agriculture, compiled by the Budgeting Committee for Agriculture (BCA)
- Aggregate account of forestry, compiled by Statistics Norway
- Catch statistics from the Directorate of fishing
- Annual census data of fish farming

Output - NACE 01

3.7.8 Aggregate account of agriculture (BCA) is close to be an exhaustive source for estimating agricultural output. Other sources used are limited to aggregate account of the reindeer industry, compiled by the Economic Committee of the reindeer industry (minor importance), and in some cases, special ad hoc calculations. The BCA Aggregate account of agriculture contains a number of tables, the headings of which are referred to as incomes - of relevance for the NNA output estimation. These tables are product related. Through such an aggregate account for agriculture **on annual basis**, and a similar aggregate account for forestry (see below), all economic activities in these industries should be covered by **complete and up-to-date statistical sources**, including also non-characteristic activities. Both sources provide '**prices x quantities = values**' information, and the accrual principle is generally followed. As such, all agricultural products have been covered with the approach followed in Norway, and efforts have been made to cover associated services of these areas as well. The agricultural activities are much regulated by the authorities, thus contributing to very good data coverage in this area. Data sources behind the BCA aggregate account of agriculture are crop statistics from Statistics Norway combined with prices collected from farmers' organizations, annual surveys from Statistics Norway, semi-annual statistics from the register of the Ministry of Agriculture (a lot of data used to supervise and calculate subsidies), census of agriculture (every 10 years) and forestry (annual census of properties larger than 25 decares = 25 000 square metres), and own data collection from organizations.

3.7.9 The Aggregate account of agriculture, compiled by the BCA, is used to estimate output in agriculture. In a few cases, adjustments are made to the basic data, or in some other cases, special ad hoc calculations are made. It is seen from the illustration tables below that output of non-farming activities of farmers is included, so is agricultural output of non-farms (garden production in particular). By distinguishing the NNA-products, steps are taken to avoid double counting when secondary activity occurs. Another issue of principle - when recording output - is **time of recording**, it is mostly a problem in quarterly accounts, not in annual NA described here. In the Norwegian quarterly accounts, agricultural output is recorded in quarters when harvested (mostly third quarter), while inputs are recorded when used throughout the accounting periods.

3.7.10 Agricultural output is specified by in total 37 characteristic NNA-products, of which 32 are under market output and 5 under production for own use. These are illustrated by 2019 figures and reference to source in the following table:

Output in agriculture. NOK billion in 2019 - Sources and methods.

<i>Market output</i>		
011 110 Grain	3.8	Tab.5.1 of BCA basic source, sub-total for sale, plus own final consumption, by various grains; adjustment made for water quality, distributed among NNA-products based on tons of grains
011 190 Oiled seeds, straw and forage	0.4	Tab.5.1 and 5.4 item
011 300 Fresh vegetables	3.1	Tab.5.3 and 5.1 item
011 350 Potatoes, legumes etc.	0.8	Tab.5.2 item
012 400 Fruit and berries	0.9	Tab.5.3 item
013 010 Flowers and live plants	1.3	Tab.5.3 items
013 690 Seeds of forage plants	0.0	Tab.5.4 item

<i>Market output</i>		
014 120 Raw milk from bovine cattle	8.7	Tab.5.5 items
014 129 Milk for own consumption	0.0	Tab.5.5 items
014 210 Bovine cattle	4.9	Tab.5.6 items
014 510 Sheep	1.6	Tab.5.6 item
014 520 Raw milk from sheep and goats	0.2	Tab.5.5 item
014 530 Wool and animal hair	0.1	Tab.5.8 (sale and hire spinning)
014 590 Reindeer, goats, horses and rabbit	0.1	Tab.5.6 and 5.10 items Totalregnskapet for Reindriftnæringen tab 4.1.10
014 600 Swine	3.6	Tab.5.6 item
014 710 Poultry	2.2	Tab.5.6 item
014 720 Eggs	1.0	Tab.5.7 item
014 729 Eggs for own consumption	0.0	Tab.5.7 item
014 910 Other live animals	0.0	Tab.5.10 items (export other animal, foxes and minks) (domestic sale of horses)
014 920 Natural honey etc.	0.2	Tab.5.10 item
014 930 Raw fur skins	0.2	Tab.5.9 items
016 220 Income from transport, capital formation	0.1	Tab.5.11 item
016 230 Stabling of horses	0.2	Tab.5.11 item
016 240 Other income from transport	0.4	Tab.5.11 items Totalregnskapet for Reindriftnæringen tab 4.4.8
019 019 Changes in breeding livestock	0.0	Tab.5.13 items; distributed on cattle types, sheep, goats, swine, fur animals and reindeer; calculated as changes in livestock valued at current year prices
019 039 Changes in livestock for slaughter	0.0	Tab.5.13 items; distributed on cattle types, swine and hens; calculated as changes in livestock valued at current year prices
019 048 Changes in stocks, fruit trees	0.0	Special estimation based on BCA information, i.e., number of fruit trees and prices (in model reference holdings), also area figures in market production
019 118 Investment in agriculture, land improvement (ditching)	0.1	Tab.5.12 items
019 138 Investment in agriculture, non-residential buildings and constructions	0.2	Tab.5.12 item
211 050 Cannabis	0.0	Separate estimations
<i>Production for own use</i>		
011 309 Fresh vegetables for own consumption	0.3	Special estimation based on relevant CPI and assuming no volume growth
011 359 Potatoes for own consumption	0.0	Special estimation based on relevant CPI and assuming no volume growth
012 409 Fresh fruit for own consumption	0.9	Special estimation based on relevant CPI and assuming no volume growth

<i>Market output</i>		
014 910 Other live animals	1.0	Special estimation based on relevant CPI (pets) and assuming no volume growth
014 980 Meat and pork for own consumption, big game	0.5	Hunting statistics
014 990 Meat and pork for own consumption, small game	0.0	Hunting statistics
022 049 Firewood for own consumption	1.4	Special estimation based on Aggregate account of forestry is published in the Forestry statistics
Total output	38.5	

3.7.11 Horticultural and landscaping services are included in output, but the latter are included only when reported as delivered to agriculture (or forestry).

3.7.12 **Hunting statistics** of Statistics Norway provide a basis for estimating output of hunting. Data are collected from the municipalities - on the yield of big game and small game felled. Statistics on hunters are based on the hunter register (felling licenses), which is updated when the hunting tax is paid to the Directorate of Nature Management.

3.7.13 The two products covered from the **hunting industry** are both **meat for own final use** as non-professional hunters are identified in Norway. Output is estimated from information on carcass weight of big game, and felling figures of small game, with the first-hand value of the total caught of big game and small game. As price data on big game, the price on reindeer is used both for reindeer, moose, red deer and roe deer. For small game, prices for grouse and hare are used.

3.7.14 A relatively small fraction of total agricultural output is treated as output from **agricultural production for own final use**. A benchmark assessment was done with the introduction of ESA95. Two sources were used. The BCA reported this kind of production by farmers in the Aggregate account for agriculture. These are in the table above shown under the heading Market output (output of market producers). The source for the products under the heading Production for own use was the Household Budget survey. In this survey, the respondents were asked for quantity information of the consumption of agricultural products produced by the households themselves and current values was reached by combining the quantity information with price information using relevant CPI components. Production of other live animals is production of pets (other than horses) estimated from the purchases reported in the Household Budget survey. In updating the estimate, no volume change has been assumed.

3.7.15 The output estimates of the NNA are very close to those given in the main source of BCA Aggregate account. Only minor corrections occur, and total adjustment to the basic source has been insignificant and that to different coverage of subsidies on products is also quite small.

3.7.16 Output of **agricultural and animal husbandry service activities** is estimated for 3 characteristic NNA-products and two non-characteristic products. Illustration by 2019 figures follows by products:

Output in agricultural services. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
016 010 Other agricultural and animal husbandry services	0.1	Covered are cow-house accounting services and services from kennel activities based on tab.5.20 of BCA Aggregate account.
016 210 Insemination	0.2	Calculated in combination with item bovine semen, as a residual on basis of farmers' costs to insemination (including semen) from tab.5.20 (Other costs) of BCA Aggregate agriculture account
016 230 Stabling of horses	0.0	Minor part of the product also in the ordinary agriculture industry, tab.5.20
<i>Non-characteristic output</i>		
	0.2	Includes bovine semen and personal services related to pets, based on tab.5.20, and own account R&D
Total output	0.5	

Output - NACE 02

3.7.17 The NNA **forestry and logging** output estimation is directly based on items of the **Aggregate account of forestry**, supplemented by more round wood cut details when split on several CPA-based products. Aggregate account of forestry is published in the **Forestry statistics** annual publication by Statistics Norway (separate table). A database (VSOP) owned by Ministry of Agriculture is behind the Aggregate account. Quantities cut for sale and industrial production from private forests and local government forests are reported here by the District Forestry Boards. The same applies to wood from common forests and State forests by their respective management. The reports are collected by the forest administration in each county and forwarded to Statistics Norway. Output in nurseries is included and estimated from data from The Norwegian Forestry Society (*Det Norske Skogselskap* in Norwegian) on volume and average prices reported from nurseries.

3.7.18 While the Forestry statistics is the main source for the national accounts estimates, some definitional adjustments are made, particularly by also **including natural growth of cultivated forests**. The basic assumptions in the estimations are that 50 per cent of the forest in Norway is cultivated and that about 90 per cent of the total growth of timber is in the cultivated part of the forest, and that there is annually a 10 per cent reduction of the cultivated forest due to natural waste. Using data from the Forestry statistics (*NOS Skogstatistikk* in Norwegian, table 2.5) and combining with “stumpage-price”-equivalent, figures for the value of changes in inventories are estimated. For more details on the deduction of the basic assumptions, see Documents 2001/2 (Statistics Norway, 2001), documenting work on environmental satellite accounts. **Supplementary sources** are manufacturing statistics, external trade statistics and the annual sample survey of agriculture and forestry.

3.7.19 Forestry output is specified by 9 characteristic and 2 non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in forestry and logging. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
012 920 Christmas trees	0.2	Item 1e of main source
021 020 Own-account construction, silviculture	0.2	Item 2a of main source
022 010 Logs of coniferous wood	4.7	12 items in Forestry statistics (prices and quantities)
022 020 Logs of non-coniferous wood and logs consumed on farms, fence wood	0.1	2 items in Forestry statistics (prices and quantities)
022 040 Fuel wood for sale	0.8	2 items in Forestry statistics, partly adjusted due to changes in legislation for reporting
023 000 Parts of plants, moss and cones	0.0	Minor item, partly estimated from external trade statistics
029 029 Changes in inventories of timber (natural growth)	2.5	Special calculations are made mainly from Forestry statistics information
029 118 Own-account construction on forest roads	0.0	
161 030 Other wood in the rough	0.0	2 items in Forestry statistics (prices and quantities)
<i>Non-characteristic output</i>		
	0.2	Includes services allied to hunting and own account R&D
Total output	8.8	

3.7.20 Services incidental to forestry and logging are produced within a separate industry covering activities of timber scaling, spraying of trees and forestry management planning (3 NNA-products specified). Timber scaling is estimated on the basis of data from the timber scaling associations, while the District Forestry Boards report data on forestry management etc.

Output - NACE 03

3.7.21 **Catch statistics** from the Directorate of Fisheries contain detailed data on quantities and values by fish species. By landing of the catch, a bill is filled in showing quantities and values of the landed fish species, type of fishing gear, disposition of the catch, fishing ground, landing place and the register identification of the boat. Nearly all sales organizations deliver this information to the Directorate of Fisheries for producing statistics. The statistics of catches from the Directorate of Fisheries comprise all catches by Norwegian registered boats in the sea fisheries. Excluded are oyster, mussel and landings that are not registered by the sales organizations, and unregistered sales of fish. Rearing of fish and fishery for own consumption are not included. The sales organizations also give information about landings by foreign boats, but these are not included in the statistics.

3.7.22 **Annual census data of fish farming** are based on a register subject to licenses managed by the Ministry of Fishing. Data refer to sale, production and investments in fish farming and are collected and published by Statistics Norway. All producers are covered (approximately 1110 licenses).

3.7.23 **Catch statistics** from the Directorate of Fisheries are utilized to estimate output of the traditional fishing industry. Like for agriculture and forestry, production data are summarized in a specific **Aggregate account of fishing**. No allowances are made for unregistered catch due to minor importance. The reason for ignoring unregistered catch is strongly regulated fisheries in which quotas apply. For fish farming, **annual census data** have been used for the estimation of output.

3.7.24 Cost surveys of fishing boats and cost surveys of fish farming (described below under intermediate consumption) are also relevant for output to have other income (than from fishing) included as well.

3.7.25 In the two industries, **output** is totally specified by 15 characteristic and 5 non-characteristic NNA-products. Six products are characteristic of fish farming, in particular, salmon and trout, but also fry and young fish, and changes in inventories in fish farming relating to smolt breeding (young fish). Fish for own consumption is specified both at industry and product level. Illustration by 2019 figures follows by products:

Output in fishing. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
031 110 Salmon and trout, fresh or chilled	0.0	Items of catch statistics
031 120 Herring, sprat and capelin, fresh or chilled	2.7	Items of catch statistics
031 130 Cod, fresh or chilled	7.5	Items of catch statistics
031 140 Coalfish, pollack and haddock	3.2	Items of catch statistics
031 150 Mackerel, fresh or chilled	2.5	Items of catch statistics
031 160 Other fishes, fresh or chilled	2.8	Items of catch statistics. Includes also fish for own consumption. Benchmark from the 1971 Fishery census, initially extrapolated by 5 per cent annual decrease in volume multiplied by price index for fresh fish. In 2012 extrapolated using the value of other fish products.
031 310 Crustaceans, shrimps, oysters	1.8	Items of catch statistics
031 380 Other aquatic products	0.0	Items of catch statistics
031 690 Sealing and whaling	0.0	Items of catch statistics
031 700 Services related to aquaculture	8.2	NO (Income Statement)
032 199 Changes in inventories, fish farming	0.3	Calculation made from annual census data of fish farming
032 310 Salmon and trout, fish farming	71.2	Items of annual census of fish farming
032 330 Other fish fresh or chilled, fish farming	0.2	Items of annual census of fish farming
032 350 Fry, young fish, aquarium fish	6.3	Items of annual census of fish farming
<i>Non-characteristic output</i>		
	2.6	Include minor items of own-account construction, freight transportation and R&D (both own account and for others)
Total output	109.6	

3.7.26 The product “Fish for own consumption” have two different sources. One component is based on a large fishing survey from 1971. This element covers the value of the catch for professional fishers that they use for own consumption and is not significant. There have been no surveys similar to this one since then. The reason for a gradual decline in this value over the years is due to a declining

number of both fishermen and vessels. The dominating part of this product, however, is the value of the catch by other households than households of fishermen. The estimate of this part of the own account production was benchmarked at the introduction of ESA95 (for 1988) and has since then been updated with changes in the catch of fish in market production and the CPI for fish. The benchmark value was the result of reconciliation of supply and use for fish

3.7.27 **Services incidental to fishing** are not estimated (minor importance). Products of sealing and whaling are also of minor importance or non-existent in this period. In 2019, output of sealing and whaling was NOK 0.0 billion (insignificant), partly produced by the fishing industry, partly by the research and development industry. In Norway, there is virtually no production of pearls (only a small amount from imports).

Intermediate consumption

3.7.28 In the NNA, **intermediate consumption** in these industries (NACE A) is estimated at NOK 93.8 billion in 2019. There are 188 NNA-products, of which 86 in agriculture (including agricultural services).

3.7.29 **Main sources used** are the same as for output:

- Aggregate account of agriculture, compiled by the Budgeting Committee for Agriculture
- Aggregate account of forestry, compiled by Statistics Norway
- Cost surveys of fishing boats
- Cost surveys of fish farms

3.7.30 A similar list of the NNA-products consumed in **agriculture** like the one on output above could have been presented here. Some 70 NNA-products are estimated directly from the Aggregate account of agriculture, i.e., items from tables 5.16 through 5.21 of the BCA source. In some cases, a BCA item had to be split for several NNA-products, in other cases BCA items have been combined to form one NNA-product.

3.7.31 Total intermediate consumption of the NNA products (in purchasers' prices) is **close to the corresponding total costs** of production inputs in the main source of BCA Aggregate account. Most important downward correction relates to part of social security contribution item.

3.7.32 A small fraction of total intermediate consumption in agriculture is recorded as intermediate consumption in agricultural **production for own final use**. Specified are 12 NNA-products. The estimation is conservatively assessed and partly based on data from the Norwegian Agricultural Economic Research Institute on reference holdings, i.e., the types of holdings that seem most relevant in this case. Prices used for this purpose are stipulated somewhat higher than corresponding prices for ordinary holdings in agriculture (adding VAT and additional trade margin). No intermediate consumption is estimated for pet production in this context.

3.7.33 For **agricultural and animal husbandry service activities**, intermediate consumption is estimated on basis of accounting data from agricultural organizations in areas of cattle and swine and data from Norwegian Dairies Association as regards cow-house accounting activities. In total, intermediate consumption of the agricultural and animal husbandry service activities is specified on some 16 different NNA products.

3.7.34 Intermediate consumption in **hunting** was estimated for the **first time in the main 2002 revision**. Data on ammunition and data on forest owners' income from selling felling licenses, hiring out terrain for hunting activities etc. are used in this estimation.

3.7.35 The items of the Aggregate account of forestry are used to estimate most of the 19 NNA-products included in intermediate consumption of **forestry and logging**. In some cases, an item had to be split for several NNA-products.

3.7.36 Finally for **forestry services**, intermediate consumption excluding use of electricity is extrapolated using same nominal change as in output.

3.7.37 **Annual cost surveys of fishing boats** were managed by the Budgeting Committee of Fishing, while from 2004 taken over by the Directorate of Fisheries. In order to utilize these data (averages by boat), a grossing up procedure is necessary. A similar **cost survey** is available **for fish farming**. Other sources used are the energy accounts worked out in Statistics Norway and corresponding prices available from the Norwegian Petroleum Institute and some oil companies.

3.7.38 In traditional fishing, the **annual cost surveys of fishing boats** provide useful data that have been utilized for the Aggregate account of fishing, and accordingly for the NNA estimate of intermediate consumption. It is calculated from profitability analysis based on operating surplus for the fleet on a whole year basis. Unregistered fishing boats are a minor problem in Norway, however. Most significant revisions have been made for repairs and maintenance of fishing boats and of machinery and equipment, insurance costs and fuels. Insurance data - based on gross premiums grossed up from the cost surveys and estimated claims based on data from a hull insurance statistics institution - are transformed into the net basis of the national accounts. Fuel consumption is estimated from the price data (see sources) and quantity data of the energy accounts.

3.7.39 The **annual cost surveys of fish farming** have been utilized for the estimation of intermediate consumption in fish farming, supplemented by data from other sources (energy accounts, data for the Fishing and Rearing of Salmon publication).

3.7.40 The following table is an excerpt from the Process table of NACE A, summarizing the source data and adjustments made for the year 2019. As seen from the table, per cent or more of the output and intermediate consumption have basis in combined annual surveys and censuses and administrative data. The adjustments made to the source data are of a conceptual nature to transform cost data in the sources into the national accounts definitions of intermediate consumption.

NACE A. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
				Benchmark extrapolations	CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrapolation + Models		
Output	0	34887	122120	1578	0	0	0	1578	0	158585
IC	0	22373	69601	371	0	0	0	371	0	92345
	Adjustments						Final estimate			
	Data validation	Conceptual	Explicit Cut-off	Explicit exhaustiveness	Balancing					
Output	0	871	0	20	0	159476				
IC	0	1325	0	73	18	93761				

3.8 Mining and quarrying (B)

Contents

3.8.1 In the NNA, the activities of NACE B are **distinguished by 6 industries** within one heading:

05-09 Mining and extraction

050	Mining of coal and lignite; extraction of peat	M
060	Extraction of crude petroleum and natural gas	M
070	Mining of metal ores	M
080	Other mining and quarrying	M
091	Service activities incidental to oil and gas extraction	M
099	Service activities incidental to other mining activities	M

3.8.2 **Oil and gas extraction activity** (NACE 06) is of **utmost importance to Norway**. Its value added share of GDP has been higher than for manufacturing (in most years since 1990) and also higher than wholesale and retail trade during the 1990s and later. Oil and gas extraction is therefore presented as a main industry item in aggregated tables by industry in Norway. It is also important to distinguish the extraction part from the services part at 3-digit NACE level.

3.8.3 Outside the oil and gas extraction activity there is no significant production for own final use, nor any non-market production. In oil and gas extraction, own account construction accounts for a minor share of total output in industry B.

3.8.4 Mining and quarrying, including extraction of crude petroleum and natural gas, make a high contribution of **15.7 per cent of GDP** in 2019. Value added share of NACE B output is 76 per cent in 2019, which is very high and even above the level of most service industries.

NACE B - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE B VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
05, 07-08	Mining and quarrying	16.3	10.0	6.3	1.3	0.2	0.2	0.2
06	Oil and gas extraction	511.4	56.2	455.2	91.7	14.4	12.8	12.4
09	Service activities incidental to oil and gas	123.8	89.1	34.8	7.0	1.1	1.0	0.9
NACE B		651.5	155.3	496.3	100.0	15.7	13.9	13.5

Output

3.8.5 Output in extraction of the crude petroleum and natural gas industry is measured at the production sites in the North Sea, with the activities taking place on-shore, mainly in a few processing plants, being regarded as an integrated part of the off-shore activity. Their output is consequently considered intermediate consumption. Pipeline transportation is recorded as output of the pipeline transport industry, partly regarded as a kind of transport margin.

3.8.6 Most **non-characteristic output** is oil-related services produced in the extraction of crude petroleum and natural gas industry. Non-characteristic items are mainland supporting activities, refined products and adjustment for foreign ownership share of oil and gas fields on the continental shelf.

3.8.7 **Main sources used** are:

- (1) Oil and gas activity statistics - NACE 06
- (2) Structural Business Statistics (SBS) – NACE 05/07/08/09
- (3) Energy statistics - NACE 06
- (4) Foreign Trade statistics - NACE 06
- (5) Investment statistics - NACE 06

3.8.8 **Oil and gas activity statistics** are considered one of the main sources for Norwegian national accounts estimation. These basic statistics are now a part of the SBS statistics reported to Eurostat, however the elaboration of the SBS for industry NACE 06 is different from those for other industries.

Oil and gas activity statistics include data on output from the Norwegian Petroleum Directorate and an annual survey to the industry. The annual oil and gas activity survey consists of **different statistical forms**, distinguishing separate oil and gas activities:

<i>Form</i>	<i>Activity-related area</i>	<i>NACE and NNA-activity</i>
D	Oil and gas fields in operation offshore	NACE 06 – 060
H	Supporting activities, oil and gas extraction	NACE 06 – 060
K	Licensee activity	NACE 06 – 060
O	Terminals in operation	NACE 06 – 060
R	Pipeline transportation	NACE 49.5 – 495

3.8.9 Annual manufacturing statistics cover mining and quarrying industries in the same manner - based on the SBS - as for manufacturing industries. In coal mining and metal ore mining (NACE 05 and 07), all units are considered large establishments, while units of NACE 08 consist of both large and small establishments.

3.8.10 Other sources used for output estimation of NACE 06 include quantity data of crude oil from **foreign trade statistics** and **energy statistics**.

3.8.11 Output of the oil and gas extraction industry (NACE 06) is mainly based on the **Oil and gas activity statistics**. Output of the corresponding service activities (NACE 091) is estimated from the SBS and a supplementary form. Various adjustments and supplements to these data sources are necessary, however. These are part of the reconciliation/balancing of supply and demand, for instance there can be some inconsistencies between the activity statistics and the foreign trade data.

3.8.12 Output is specified by 4 characteristic and 5 non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in oil and gas extraction. NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
060 010 Crude petroleum	286.9	Estimated on p x q terms, i.e., output in tons from Oil and gas activity statistics and export price (adjusted for pipeline transport) per ton, as item in form D of main source does not contain value information
060 020 Natural gas	165.4	Estimated on p x q terms, i.e., output in standard cubic meter from Oil and gas activity statistics and energy statistics, and export price (adjusted for pipeline transport) per SM3, as item in form D of main source does not contain value information.
060 030 Natural gas liquidated (NGL)	6.7	Estimated on p x q terms, i.e., output in standard cubic meter from foreign trade statistics and export price (adjusted for pipeline transport) per standard cubic meter, as item in form D of main source does not contain value information
060 058 Own-account construction	13.4	Estimated from the quarterly investments statistics.
<i>Non-characteristic output</i>		
	38.9	Included are foreign ownership adjustment to oil and gas fields (0.3 billion), gasoline, naphtha (10.5 billion), propane and butanes (26.7billion), all estimated from items in form D of main source, and R&D (1.5 billion).
Total output	511.4	

3.8.13 Output of crude oil is estimated from quantity data in tons from Oil and gas activity statistics and export price per ton. Adjustment is made for pipeline transport costs on Norwegian shelf to border before export price is determined.

3.8.14 Output of natural gas is estimated from the use side, as exports plus domestic uses adjusted for pipeline transport. There are also some deliveries of natural gas to mainland manufacturing and other uses, but just small amounts until now, though increasing.

3.8.15 Output from mainland production in this activity refers to services from offices, supply bases and terminals. These are services delivered to other units in NACE 060 industry for gross fixed capital formation (for own final use). Output is estimated from total production costs in this case, based on items in statistical forms K and T (investments form) in particular.

3.8.16 Output of industry NACE 091 is estimated from the SBS, comprising standard NO and supplementary statistical form H (Technical services incidental to petroleum activities). Main activities are drilling of exploration and production wells from movable oil rigs and other offshore activities, such as draining and drilling services from non-movable installations and other specialized technical consultancy activities.

3.8.17 Foreign ownership adjustment to oil and gas fields refers to allocating income (deducting amounts of cost) with the U.K. from border fields of the Norwegian continental shelf. A few fields are

located directly on the border between Norway and the United Kingdom, and the revenue and costs are shared proportionally. The UK's share of the costs of the Norwegian operated Statfjord (earlier also Frigg) are recorded as exports to the UK, and Norway's share of the costs of the UK-operated Murchinson field as imports from the UK. Gasoline, naphtha and propane and butanes are recorded products sold at the terminal, while the part produced at the fields of the same products are recorded as sale of oil.

3.8.18 For **mining and quarrying** (except oil and gas extraction), output data in **manufacturing statistics** are used as the basis for the NNA output estimates. Direct calculation of output is carried out according to definition of output from the SBS, given in section 3.3 above.

Intermediate consumption

3.8.19 In the NNA, **intermediate consumption** in these industries is estimated at 155 billion NOK in 2019. There are about 150 NNA-products, typically 30 - 40 products in each industry.

3.8.20 **Main sources used** are the same as for output:

- (1) Oil and gas activity statistics
- (2) Structural Business Statistics

3.8.21 **Oil and gas activity statistics** include data on intermediate consumption collected annually in the different statistical forms, listed in the output section above.

3.8.22 For other mining and quarrying and services incidental to oil and gas extraction - as for output - the main source is the **SBS**.

3.8.23 Intermediate consumption in the oil and gas extraction industry is estimated based on the **oil and gas activity statistics collected annually** on the various forms indicated above. Estimates of some 40 NNA-products are specified, most of them compiled from these forms. Items in main source deviate from product items of the NNA, as a result, ratios have to be introduced for many products.

3.8.24 For some of the input NNA-products, more specific information might better explain the methods of estimation. Foreign ownership adjustment to oil and gas fields (see also output) involves additional adjustment for costs incurred on border fields with the UK. Item of electricity includes electricity purchased, while excluding electricity produced on oil platforms at the fields. Item of non-life insurance is estimated on national accounting principles and is distributed among the industries of extraction and services proportional to their non-financial assets. FISIM (two NNA-products), not covered in main source, has to be added.

3.8.25 **Direct imports** - i.e., unspecified goods and services directly imported to the continental shelf - are of particular concern, as they are not fully covered by the customs and external trade statistics. The method of estimation in these cases - as in the balance of payments estimation - is to utilize data on import shares by oil and gas fields given on the D-forms of the oil and gas activity statistics and multiply these **import shares** by relevant items to arrive at value terms.

3.8.26 For the **services incidental to oil extraction**, intermediate consumption is estimated mainly from the SBS, as given in section 3.3 above. Intermediate consumption involves direct imports either estimated from the **SBS** and supplementary form H or from balance of payments data. Information from these two sources is compared for final choice before estimation eventually is made.

3.8.27 In 2019, intermediate consumption is 72 per cent of its corresponding output in the services incidental to oil and gas extraction industry, while it is about only 11 per cent in the oil and gas extraction industry. This of course reflects the fact that resource rent is included in the output value of oil and gas extraction activities.

3.8.28 The following table is an excerpt from the Process table of NACE B, summarizing the source data and adjustments made for the year 2019. As seen from the table, the larger share of the output and intermediate consumption has basis in annual surveys and censuses. The adjustments made to the source data are partly of a conceptual nature to transform data in the sources into the national accounts definitions, and partly an adjustment for a revision of source data during the process. A minor adjustment is also made due to balancing.

NACE B. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
Benchmark extra-polations				CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrap +Models			
Output	509 922	0	139 493	0	0	0	0	0	0	649 415
IC	49297	0	95646	0	0	0	0	0	0	144 943
	Adjustments							Final estimate		
	Data validation	Conceptual	Explicit Cut-off	Explicit exhaustiveness	Balancing					
Output	0	2024	0	0	1	651 558				
IC	0	9 937	0	0	233	155 267				

3.9 Manufacturing (C)

Contents

3.9.1 In the NNA, the activities of NACE C are **distinguished by 44 industries** within 19 A64 headings:

10-12	Manufacture of food products, beverages and tobacco	
101	Production, processing and preserving of meat and meat products	M
102	Processing and preserving of fish and fish products	M
103	Processing and preserving of fruit and vegetables	M
104	Manufacture of vegetable and animal oils and fats	M
105	Manufacture of dairy products	M
106	Manufacture of grain mill products, starches and starch products	M
107	Manufacture of pastry and paste products	M
108	Manufacture of other food products	M

109	Manufacture of prepared animal feeds	M
110	Manufacture of beverages	M
13-15	Manufacture of textiles, wearing apparel and leather products	
130	Manufacture of textiles	M
140	Manufacture of wearing apparel	M
150	Manufacture of leather and related products	M
16	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	
160	Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	M
17	Manufacture of pulp, paper and paper products	
170	Manufacture of pulp, paper and paper products	M
18	Printing	
180	Printing and reproduction of recorded media	M
19	Manufacture of coke and refined petroleum products	
190	Manufacture of coke and refined petroleum products	M
20	Manufacture of chemicals and chemical products	
201	Manufacture of basic chemicals	M
207	Manufacture of plastics and man-made fibres	M
208	Manufacture of other chemical products	M
21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	
210	Manufacture of basic pharmaceutical products and pharmaceutical preparations	M
22	Manufacture of rubber and plastic products	
220	Manufacture of rubber and plastic products	M
23	Manufacture of other non-metallic mineral products	
231	Manufacture of glass and glass products	M
232	Manufacture of ceramic products, bricks, tiles etc.	M
235	Manufacture of cement, lime and plaster	M
236	Manufacture of articles of non-metallic mineral products	M
24	Manufacture of basic metals	
241	Manufacture of iron, steel and ferro-alloys	M
243	Aluminium production	M

	244	Manufacture of other non-ferrous metals	M
	245	Casting of metals	M
25		Manufacture of fabricated metal products, except machinery and equipment	
	251	Manufacture of structural metal products	M
	259	Manufacture of other fabricated metal products	M
26		Manufacture of electronic, computer and optical products	
	260	Manufacture of electronic, computer and optical products	M
27		Manufacture of electrical equipment	
	270	Manufacture of electrical equipment	M
28		Manufacture of other machinery and equipment	
	280	Manufacture of other machinery and equipment	M
29		Manufacture of motor vehicles, trailers and semi-trailers	
	290	Manufacture of motor vehicles, trailers and semi-trailers	M
30		Manufacture of other transport equipment	
	301	Building of ships and boats	M
	302	Building of oil platforms and modules	M
	309	Manufacture of other transport equipment	M
31-32		Manufacture of furniture and other manufacturing	
	310	Manufacture of furniture	M
	320	Other manufacturing.	M
33		Repair and installation of machinery and equipment	
	331	Repair of metal product, machinery and equipment	M
	332	Installation of industrial machinery and equipment	M

3.9.2 All manufacturing industries are **market producers**.

3.9.3 Manufacturing makes a **contribution of 6.2 per cent of GDP** in 2019. Value added share of output is 25.2 per cent in 2019 for total manufacturing, which is of course much lower than the national average (52.3 per cent). This also explains the more detailed industry breakdown of manufacturing. The gross flows of products in manufacturing are much higher than its share of total GDP indicates. To accommodate for production and productivity analysis, energy analysis and environmental analysis based on homogenous production units, the large number of detailed industries are justified.

NACE C - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE C VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
10-12	Manufacture of food products, beverages and tobacco products	251.4	201.2	50.1	22.8	1.6	1.4	1.4
13-15	Manufacture of textiles, wearing apparel and leather products	8.3	5.2	3.1	1.4	0.1	0.1	0.1
16	Manufacture of wood and wood products, except furniture	31.4	22.4	9.0	4.1	0.3	0.3	0.2
17	Manufacture of paper and paper products	16.9	13.4	3.5	1.6	0.1	0.1	0.1
18	Printing and reproduction of recorded media	7.8	4.6	3.2	1.5	0.1	0.1	0.1
19-21	Refined petroleum, chemical and pharmaceutical products	139.7	113.2	26.5	12.0	0.8	0.7	0.7
22	Manufacture of rubber and plastic products	13.0	8.2	4.8	2.2	0.2	0.1	0.1
23	Manufacture of other non-metallic mineral products	38.0	27.6	10.4	4.7	0.3	0.3	0.3
24	Manufacture of basic metals	77.1	66.6	10.5	4.8	0.3	0.3	0.3
25	Fabricated metal products, except machinery and equipment	50.0	30.3	19.7	9.0	0.6	0.6	0.5

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE C VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
26	Manufacture of computer, electronic and optical products	27.2	16.5	10.7	4.8	0.3	0.3	0.3
27	Manufacture of electrical equipment	23.0	15.7	7.2	3.3	0.2	0.2	0.2
28	Manufacture of machinery and equipment n.e.c.	61.1	42.1	19.0	8.6	0.6	0.5	0.5
29	Manufacture of motor vehicles, trailers and semi-trailers	8.4	5.8	2.6	1.2	0.1	0.1	0.1
30	Building of ships, oil platforms and moduls	56.0	41.4	14.6	6.6	0.5	0.4	0.4
31-32	Manufacture of furniture	15.8	9.2	6.7	3.0	0.2	0.2	0.2
33	Repair and installation of machinery and equipment	49.6	31.0	18.6	8.4	0.6	0.5	0.5
NACE C		874.7	654.4	220.3	100.0	7.0	6.2	6.0

Output

3.9.4 A substantial part of the **non-characteristic output** in manufacturing is output that is not attached as characteristic of any NACE industry. This is a **technical solution** chosen in the NNA based on primary information available. What is recorded as contract work, is often contract work for units of the same industry. The CPA method and the Prodcom statistics (see below) are utilized in order to control industry code of units in manufacturing statistics.

3.9.5 **Main sources used** are:

- Manufacturing statistics, SBS-based
- Prodcom

3.9.6 **Annual manufacturing statistics**, based on the approach of the **Structural business statistics**, are one of the most important statistical sources for national accounting. **Annual statistics by products based on Prodcom** is important for distribution of output in manufacturing on products and thus for the whole balancing process in the commodity flow system. Definition of output from these structural business statistics is already provided in section 3.4 above. The supplementary questionnaire (TS items) is much more comprehensive in manufacturing than in services industries in that respect. In particular, when defining output of characteristic products, the TS supplies data on sale

of own produced goods separately, while for other industries sales of own produced goods and services are mixed together with sales of goods for resale.

NO-items		TS-items manufacturing	
NO3000	Sales of goods and services, liable to VAT	IS 210	Sales of own produced goods
+ NO3100	Sales of goods and services, free of VAT	IS210	Sales of own produced goods
+ NO3200	Sales of goods and services, not subject to VAT	IS210	Sales of own produced goods
+ NO3500	Own account investments, capitalized		
- NO4295	Changes in stocks, finished goods and work in progress	IS420 IS430	Changes in stocks of goods under construction and running projects, and changes in stocks of owned produced finished goods
- TS post	Sales of goods for resale	IS 220	Sales of goods for resale

Publication versions	Output. NOK billion in 2019
Manufacturing statistics, SBS-based in basic prices	871.4
National accounts in basic prices	874.7

3.9.7 In the 2006 main revision, large parts of the recycling industry were reclassified as services activities within the renovation services industry, reducing the value added in the recycling manufacturing industry by about 2/3. The transformation to NACE rev.2 in the 2011 main revision made further reduction to the manufacturing industry.

Intermediate consumption

3.9.8 In the NNA, **intermediate consumption in manufacturing** is estimated at NOK 654.4 billion in 2019. The number of inputs specified is quite high (more than 70 NNA-products in some cases), while also including a good number of insignificant values.

3.9.9 **Main sources used** are:

- Manufacturing statistics, SBS-based
- Periodic statistical survey on manufacturing inputs

3.9.10 **Annual manufacturing statistics** based on the approach of the **Structural business statistics** are one of the most important statistical sources for national accounting. Definition of intermediate consumption from these structural business statistics is already provided in section 3.4 above.

3.9.11 As for the **details of the input data**, a full set of details are available on an annual basis as from 2008 with specifications covering about 90 per cent of intermediate consumption in each industry. In addition, **data on energy use by products** have continued to be available on annual basis. This has contributed to improved quality on energy input data in manufacturing.

3.9.12 When product details are not provided (about 10 per cent), the method used is to apply value indices by activity group (i.e., for each NNA-industry in manufacturing). That means, the same distribution by product in current prices was kept as in the preceding year.

Publication versions	Intermediate consumption. NOK billion in 2019
Manufacturing statistics, SBS-based	644.0
National accounts	654.4

3.9.13 Like for output, the difference between the figures in the manufacturing statistics and the NA is explained by various definitional and other adjustments to the source data. Two obvious items helped explain this difference: FISIM as an addition, and a downward adjustment for insurance when applying the narrower national account concept on insurance.

3.9.14 The following table is an excerpt from the Process table of NACE C, summarizing the source data and adjustments made for the year 2019. As seen from the table, the output and intermediate consumption have basis in annual combined data sources (SBS). The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, while a minor adjustment is made due to balancing. The adjustments for data validation are mainly related to double counting of units that are also included in aquaculture.

NACE C. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
Benchmark extra-polarations				CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrapolation + Models			
Output	0	0	865 072	0	0	0	0	0	0	865 072
IC	0	0	647 666	0	0	0	0	0	0	647 666
	Adjustments							Final estimate		
	Data validation	Conceptual		Explicit Cut-off	Explicit exhaustiveness		Balancing			
Output	-11 605	21 275		0	0		-57	874 685		
IC	-11 573	18 462		0	4		-145	654 414		

3.10 Electricity, gas, steam and hot water supply (D)

Contents

3.10.1 In the NNA, the activities of NACE D are **distinguished by 4 industries** within one A64 heading:

35 Electricity, gas, steam and hot water supply

350	Production of electricity	M
351	Distribution of electricity	M
352	Manufacture and distribution of gaseous fuels through mains	M
353	Steam and hot water supply	M

3.10.2 Electricity production, mostly based on hydro power, is important in Norway. In order to reflect market conditions, and also to respond to requirements in economic models, **two separate industries of electricity** are distinguished, i.e., production of electricity and distribution of electricity. The latter comprises both renting of network for transportation of electricity and distribution of electricity through sales (trade margin treatment). Gas supply, and steam and hot water supply, are rather insignificant industries in Norway, in fact, gas supply is non-existent for a number of years.

3.10.3 Electricity, gas, steam and hot water supply make a **contribution of 2.2 per cent to GDP** in 2019. Value added share of output was 80 per cent.

NACE D - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE D VA	Total VA	GDP	GNI
35	Electricity, gas, steam and air conditioning supply	97.7	19.3	78.4	100.0	2.5	2.2	2.1
NACE D		97.7	19.3	78.4	100.0	2.5	2.2	2.1

Output

3.10.4 Most output is characteristic, while **non-characteristic output**, in particular own-account construction, and some renting services as well are concentrated in the electricity industries.

3.10.5 **Main source used** is:

- Electricity statistics (eRapp) – SBS-based.

3.10.6 **Annual electricity statistics** belong to the main sources used to calculate GDP. The annual electricity statistics are production statistics like manufacturing statistics, based on the approach of the **Structural Business Statistics**.

3.10.7 Electricity statistics are used to estimate output of electricity production. Electricity output is estimated net, i.e., output of each producer of electrical energy less electrical energy that these producers have purchased in the wholesale electricity market. Values are consistent with quantity data in the **energy accounts** of Statistics Norway. Output of the NNA-industry 350 includes electricity production for sale on spot contracts, weekly or future contracts, bilateral agreements, deliveries to energy intensive manufacturing units and exports on short-term or long-term agreements. Output of the NNA-industry 351 includes income from renting of distribution network and output estimated by multiplying energy accounting quantities by margin rates, i.e., purchasers' prices less producers' prices (internal prices in the market) in connection with tariffs for general deliveries, spot price or futures contracts plus commission, brokers' commission etc. Totals are consistent with the SBS totals.

3.10.8 Output is specified by 5 characteristic and 11 non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in electricity etc. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
351 107 Electricity transmission and distribution services	29.4	Item of main source
351 110 Electricity	45.9	Items of main source
351 120 Loss of energy in network	2.6	Items of main source; total less exports and domestic uses
352 000 Manufactured gas; distribution services of gaseous fuels through mains	0.7	Items of main source
353 000 Steam and hot water supply services	4.5	Items of main source
<i>Non-characteristic output</i>		
	14.6	Includes repair work, installation work, rental services, trade margin goods for resale, all estimated from main source, and R&D
Total output	97.7	

3.10.9 Electricity transmission and distribution services are recorded as transport and trade margins. In Norway, several different levels of distribution networks exist, while for this purpose two kinds are essential: central network and regional network. For calculating output transport margins, transport prices are multiplied by electricity quantities used in the respective industries, extracted from Electricity statistics, thereby calculating transport costs for this part. To complete this calculation, electricity quantities for the other user groups are multiplied by the estimated tariff on transport through the central network and added to the first part.

3.10.10 Loss of energy in the network is introduced as a separate product item in order to balance supply and use and to achieve **consistency in physical terms**. Technically, this output flow becomes intermediate consumption in the NNA industry 351.

3.10.11 As a parallel to the ordinary estimation of wholesale and retail trade services, **trade margins on electricity output flows** are estimated from differences between sales and purchases (in the NA valuation terms, as purchaser's price less producer's price). In the case of vertically integrated plants, an internal price for purchases is to be used.

3.10.12 Annual district heating statistics are used for the estimation of output of **steam and hot water supply**.

Intermediate consumption

3.10.13 In the NNA, **intermediate consumption** in these industries is estimated at NOK 19.3 billion in 2019. The number of inputs specified is typically about 25 NNA-products in the first two, and somewhat less in the third industry and about 40 in the steam and hot water supply industry.

3.10.14 **Main source used** is the same as for output:

- Electricity statistics

3.10.15 **Annual electricity statistics** are utilized to estimate intermediate consumption of the **electricity production and distribution industries**. For the two NNA-industries, various cost items of the main source are applicable. When applying the trade margin method, output flows are not traced through other industries of electricity production as intermediate consumption, as would be the case following a gross treatment. The only special item of intermediate consumption to be recognized is loss of energy in the network flowing from the NNA-industry 350 as output to intermediate consumption in the NNA-industry 351. Annual electricity statistics are also utilized to estimate intermediate consumption of **steam and hot water supply**.

3.10.16 The following table is an excerpt from the Process table of NACE D, summarizing the source data and adjustments made for the year 2019. As seen from the table, the larger share of the output and intermediate consumption have basis in administrative data.

NACE D. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrap +Models</i>		
<i>Output</i>	0	84533	679	0	0	0	0	0	0	85212
<i>IC</i>	0	22811	404	0	0	0	0	0	0	23215
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>		<i>Explicit Cut-off</i>	<i>Explicit exhaustive-ness</i>		<i>Balancing</i>			
<i>Output</i>	0	12475		0	0		0	97 687		
<i>IC</i>	0	-3889		0	0		0	19 326		

3.11 Water supply, sewerage, waste management and remediation activities (E)

Contents

3.11.1 The activities of NACE E are distinguished by 4 industries within two A64 headings:

36	Collection, purification and distribution of water		
360	Collection, purification and distribution of water	M	N
37-39	Sewerage, waste management and remediation activities		
370	Sewerage	M	N
380	Waste management	M	N
390	Remediation activities	M	

3.11.2 The activities within the NACE industries 36 – 38 involve both non-market producers (denoted as N) and market producers. The non-market producers are mainly local government units. Producers of **water supply** are mostly treated as non-market production of **institutional units of local government**. Estimating output from cost side and deducting for fees to local government results in local government consumption expenditure with a negative sign.

3.11.3 NACE E contributes **0.6 per cent to GDP** in 2019. Value added share of output was 37 per cent.

NACE E - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE E VA	Total VA	GDP	GN I
36	Water collection, treatment and supply	9.6	4.3	5.3	23.8	0.2	0.1	0.1
37-39	Sewerage	50.8	33.8	17.0	76.2	0.5	0.5	0.5
NACE E		60.4	38.1	22.3	100.0	0.7	0.6	0.6

3.11.4 **Main sources used** are:

- Annual Structural Business Statistics – accounts based
- Local government accounts

3.11.5 **Local government accounts** are utilized for the estimation of **water supply output**. In the NNA, most of the waterworks have been treated as market producers (i.e., secondary local KAUs) of local government. This has been motivated by a streamlined treatment of waterworks as institutional

units of local government throughout the national accounts from production to balance sheets. Only a few waterworks are treated as market producers of non-financial corporations (public enterprises of local government). The provisional solution is coupled by a market price estimation of output from government fees alone.

3.11.6 Market producers are covered by the SBS-based annual statistics and the transformation to the NA concepts follows the rules explained in chapter 3.4.

3.11.7 Output in NACE E is specified by 17 characteristic products and 11 non-characteristic ones.

Output in NACE E. NOK billion in 2019 - Sources and methods.

<i>Market - Characteristic output</i>		
360 000 Water supply	0.6	SBS-based data.
370 000 Sewerage	1.8	SBS-based data.
381 000 Waste collection	9.4	SBS-based data.
382 000 Waste treatment and disposal services	3.2	SBS-based data
383 100 Dismantling services of wrecks	0.0	SBS-based data
383 200 Sorted metal materials recovery services	3.4	SBS-based data
383 210 Sorted glass materials recovery services	0.6	SBS-based data
383 220 Sorted paper and cardboard materials recovery services	7.6	SBS-based data
383 230 Sorted plastic materials recovery services	3.4	SBS-based data
383 290 Other sorted materials recovery services	1.4	SBS-based data
390 000 Remediation services and other waste management services	0.5	SBS-based data
<i>Non-market - Characteristic output</i>		
6 products (fees, final consumption products)	19.6	Local government accounts
<i>Non-characteristic output</i>		
Various (Rent, margins on goods for resale)	8.9	Local government accounts - SBS-based data
Total output	60.4	

Intermediate consumption

3.11.8 In the NNA, **intermediate consumption** in these industries is estimated at NOK 38.1 billion in 2019. The number of inputs specified is typically 30 - 40 NNA-products in the first two, more than 50 in the third and about 20 in the fourth industry.

3.11.9 **Main sources used** are the same as for output:

- Annual Structural Business Statistics – accounts based
- Local government accounts

3.11.10 For **sewage and refuse disposal, sanitation and similar activities, local government accounts** are used to estimate output of local government (market output in this case). The private market output is estimated from output data available in **annual accounting statistics (SBS-based)**.

3.11.11 **Local government accounts** are also utilized to estimate intermediate consumption of the water supply industry. Three cost items are identified with the relevant chapter (162 Water supply) of local government accounts.

3.11.12 The following table is an excerpt from the Process table of NACE E, summarizing the source data and adjustments made for the year 2019. As seen from the table the larger share of the output and intermediate consumption have basis in annual combined data, in particular SBS. The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, while a minor adjustment is made due to balancing.

NACE E. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
				Benchmark extra-polarations	CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrap +Models		
Output	0	0	59966	0						59966
IC	0	0	37991	0						37991
	Adjustments							Final estimate		
	Data validation	Conceptual		Explicit Cut-off	Explicit exhaustiveness	Balancing				
Output	0	475			0	1		60442		
IC	0	117			0	-5		38103		

3.12 Construction (F)

Contents

3.12.1 In the NNA, the activities of NACE F are **distinguished by 4 industries** within one A64 heading:

41-43 Construction

411	Development of building projects	M
412	Construction of buildings etc.	M O
420	Construction of civil engineering works	M
430	Specialized construction activities	M

3.12.2 Of the four industries, 430 Specialised construction activities is by far the largest, accounting for more than 50 per cent of value added in NACE F. The second largest is 412 Construction of buildings etc., accounting for around 30 per cent, while each of the other two industries accounts for about 10 per cent.

3.12.3 **Own-account construction of buildings for own final use** accounts for 2.2 per cent of total construction output in 2019.

3.12.4 Construction made a **contribution of 6 per cent to GDP** in 2019. Value added share of its output is 34 per cent.

NACE F - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE F VA	Total VA	GDP	GNI
41-43	Construction	639.8	424.6	215.2	100.0	6.8	6.0	5.9
	NACE F	639.8	424.6	215.2	100.0	6.8	6.0	5.9

Output

3.12.5 When distinguishing between characteristic and non-characteristic output, **characteristic output** encompasses all that is connected to construction regardless characteristic of each sub-industry in construction. In this sense, non-characteristic output consists only of some trade margins from sales, contract work, and fees for certain services.

3.12.6 **Main sources used** are:

- Annual construction statistics, SBS-based

3.12.7 The **structural business statistics with detailed module in construction** consist of three parts: Private construction activities, State and state-owned enterprises, and municipality business undertakings and independent council enterprises. Excluded are construction activities performed for own account by enterprises that belong to other industry divisions.

3.12.8 Construction statistics are **used in a direct way** to estimate output in construction and open up for an orientation towards the CPA in product terms, since **sub-contracting work** is taken into account. It should also be mentioned that from building statistics, we receive data on building work that has started (monthly) and buildings that are finished. These data are used for estimating GFCF in buildings, in the monthly and quarterly accounts. There is each year a **reconciliation process**, where **GFCF and other uses** of construction services (for maintenance etc.) are **compared to production** in the NACE F industry.

3.12.9 **Output is specified** by 17 characteristic (construction consolidated) and substantially fewer non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in construction. NOK billion in 2019 - Sources and methods.

<i>Market - Characteristic output</i>		
410 010 General construction work for residential buildings	80.3	SBS-based data.
410 020 General construction work for other buildings	131.9	SBS-based data.
411 010 Activities of housing cooperatives	2.6	SBS-based data.
411 090 Development and sale of property for own account	69.0	SBS-based data.
420 000 General civil engineering construction work	74.0	SBS-based data.
431 000 Demolition and site preparation works	69.3	SBS-based data.
432 100 Electrical installation works	53.2	SBS-based data.
432.200 Plumbing, heat and air-conditioning installation works	48.2	SBS-based data.
432 900 Other construction installation works	4.3	SBS-based data.
433 100 Plastering works	0.0	SBS-based data.
433 200 Joinery installation works	15.5	SBS-based data.
433 300 Floor and wall covering works	4.3	SBS-based data.
433 410 Painting works	10.4	SBS-based data.
433 420 Glazing works	1.7	SBS-based data.
433 900 Other building completion and finishing works	40.3	SBS-based data.
439 100 Other specialised construction works	8.6	SBS-based data.
<i>Non-characteristic output</i>		
	13.3	SBA-based data. Includes trade services (trade margins) from sale of goods, fees for various renting services, repair and installation services, own account investments
<i>Production for own final use</i>		
410 008 Own-account construction of dwellings	13.0	Extrapolation from benchmark levels based on the Surveys on Housing Conditions and rehabilitation of buildings 1988/ 1989, and later reassessment based on balancing and data from time-use survey 2000.
Total output	639.8	

3.12.10 The use of construction statistics in a direct way means that **industry-based data in construction statistics define the contents of output** of the respective characteristic NNA-products. Definition of output from this structural business statistics is already provided in section 3.4 above.

3.12.11 A study on **non-registered construction activities** in 2009 based on special surveys led to an upward adjustment of output and value added in NACE F in the 2011 main revision. For the benchmark year 2007, value added was raised almost 6 per cent. The figures for non-registered construction activities are extrapolated using a model employing data on number of employees, growth in wages and data on unemployed.

3.12.12 **Own-account construction of buildings for own final use** is calculated from the cost side, i.e., by estimated components for intermediate consumption and imputed income (mixed income) of households engaged in such construction work. Separate estimates were made for **new dwellings**, for **major improvements and the like on existing dwellings**, and for **cottages, summerhouses etc.** The second item on major improvements to existing dwellings was most important. The **survey of housing conditions**, which was the source of the estimate, has been stopped as a separate survey, but the subject is carried on in the general standard of living surveys, which contains questions of housing conditions every second year. The questions about households own building activities have not been repeated. The 1988 surveys of housing conditions and rehabilitation of existing buildings provided basic data on building costs and hours worked (owner-occupied dwellings) that have been utilized in these calculations. Average hourly earnings in construction were used with the estimated hours worked. Material costs were estimated at 150 per cent of the mixed income estimate just described, based on data in construction statistics and the survey of rehabilitation of existing buildings. Own-account construction on existing dwellings was estimated in two parts - one for major improvements etc. (the major part) and one for extended dwelling area, the latter by also utilizing data from building and construction statistics. For the first years, the estimate was extrapolated using volume indicators (growth in finished new houses, growth in new holiday houses). Price increases were then applied separately for building materials and for wages (the estimated value of own time use). In view of the lack of updated sources, the extrapolation has been simplified. Previous year's estimate is now extrapolated using the price index gross fixed capital formation for dwellings, assuming no volume growth. The estimate is generally subject to smaller changes during the reconciliation process for the construction industry. **In the 2002 revision**, the same benchmark method was retained, as no economic information was available from more recent surveys in this area. Indicators for extrapolation were updated, however. The **2006 main revision** brought a 10 per cent downward adjustment on the level of own account construction of buildings for own final use. The reason being a reassessment based on general **balancing** of construction services, data from the most **recent survey of time-use** in households, and to the reflection over the fact that more restrictions from government has been put on own construction work. The downward adjustment in the 2006 revision was done as a result of several considerations: no updated data sources were found, so the estimate is quite uncertain; new building regulations for dwellings has made own account work more difficult; the general growth in incomes and wealth makes it probable that a larger part of rehabilitation and renewals now are done by professionals; the estimates for the regular construction industry indicated some mismatch of supply relative to uses, which would have to be reconciled. In light of these considerations, it was assumed that a suitable part of what we had considered to be household own construction work actually had been delivered by professional suppliers belonging to NACE F industries. The extent of the revision was (part of) the outcome of the reconciliation of supply and uses of building services from NACE F.

3.12.13 The volume of own account construction of buildings for own final use is extrapolated by use of retail trade in NACE 47.52. Value added, intermediate consumption and output is extrapolated by the same index.

3.12.14 **Exports of construction services** are captured through the quarterly sample survey on exports of services (UT) – se chapter 5.16. Exports includes the value of all payments received from foreign

NACE F Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
<i>Benchmark extra-polarations</i>				<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrap +Models</i>			
<i>Output</i>	0	0	628 264	13 002	0	0	0	13 002	0	641 266
<i>IC</i>	0	0	429 760	8 217	0	0	0	8 217	0	437 977
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>		<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>		<i>Balancing</i>			
<i>Output</i>	0	-13 313		0	11828		2	639 783		
<i>IC</i>	0	-13 429		0	0		7	424 555		

customers for services, materials and goods which constitute a relevant part of construction projects abroad, including letting of construction machines and equipment with crew. These incomes are also included in the accounting based structural business statistics and thus in output in the NNA.

Intermediate consumption

3.12.15 In the NNA, **intermediate consumption** in construction is estimated at NOK 424.6 billion in 2019. Number of NNA-products involved varies from about 30 up to 117.

3.12.16 **Main sources used** are:

- Annual construction statistics, SBS-based

3.12.17 The SBS-based **Annual construction statistics** data are quite detailed and useful for the NA compilation and are **used directly** to estimate intermediate consumption in construction. Definition of

intermediate consumption from this structural business statistics is already provided in section 3.4 above.

3.12.18 The following table is an excerpt from the Process table of NACE F, summarizing the source data and adjustments made for the year 2019. As seen from the table output and intermediate consumption have basis in annual combined data sources (SBS). The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, and adjustments for explicit exhaustiveness.

3.13 Wholesale and retail trade; repair of motor vehicles and motorcycles (G)

Contents

3.13.1 In the NNA, the activities of NACE G are **distinguished by 3 industries** within the three A64 headings:

45	Wholesale, retail trade and repair of motor vehicles, motorcycles	
450	Wholesale, retail trade and repair of motor vehicles, motorcycles	M
46	Wholesale trade, except of motor vehicles and motorcycles	
460	Wholesale trade, except of motor vehicles and motorcycles	M
47	Retail trade, except of motor vehicles and motorcycles	
470	Retail trade, except of motor vehicles and motorcycles	M

3.13.2 The treatment in the NNA is primarily estimating **trade margin output** from the supply side based on the SBS-data, balanced against **trade margins estimated independently on the use side**. The industry breakdown for output is however not accompanied by a similar detailed breakdown for the trade margins. The **margins are global margins by product** and thus not divided into wholesale and retail trade components, and transport margins.

3.13.3 Wholesale and retail trade, including repairs, i.e., NACE G all together, makes a **contribution of 7.3 per cent to GDP** in 2019. Value added share of output is 55.2 per cent in 2019, slightly over the national average (52.3 per cent), and lower than in many service activities.

NACE G - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE G VA	Total VA	GDP	GNI
45	Wholesale and retail trade and repair of motor vehicles	81.0	38.5	42.5	16.4	1.3	1.2	1.2
46	Wholesale trade, except of motor vehicles	218.0	97.6	120.5	46.6	3.8	3.4	3.3
47	Retail trade, except of motor vehicles	170.2	74.4	95.8	37.0	3.0	2.7	2.6
NACE G		469.3	210.4	258.8	100.0	8.2	7.3	7.0

Output

3.13.4 Output of trade margins are treated as produced in industries other than wholesale and retail trade - such as manufacturing and hotels and restaurants - as non-characteristic output. The information on trade margins are for all industries taken from the SBS based on the Income Statement (NO), see section 3.4.

3.13.5 For the trade services, **the margin concept has been applied**. About 95 per cent of output is **characteristic output** of these industries. **Non-characteristic output** in wholesale trade consists of some own account work and letting and renting services. Non-characteristic output in retail trade consists of the same type of services, plus some repairs. Some of these services - although partly insignificant - are also provided as non-characteristic output of the other industries in the group.

3.13.6 The **wholesale and retail trade industry** has always had a **special position in the output compilation of the national accounts**, due to the output concept used. Treating gross trade margins as trade industry output affects most recordings of the supply and use tables through **the commodity flow approach**. Direct use of production statistics on a current basis has been a compilation scenario in this industry since the SBS-based data were first utilized in the 2002 revision.

3.13.7 **Transport margins** are treated directly on a "net" basis in the NNA as a margin on each detailed product flow but are not identified as separate items.

3.13.8 Regarding **trade margins on illegal products**, those products (smuggled alcohol and drugs) are identified as separate products in the NNA, and a separate margin is estimated on those products.

3.13.9 **Main sources used** are:

- Annual accounting statistics, SBS-based
- Sample surveys on trade margins of retail and wholesale trade (2008)

3.13.10 The **statistical basis for the output compilation** of the trade industries comprises the ad hoc **sample surveys on trade margins** and the SBS-based **accounting statistics** for wholesale and retail trade, both being regarded as a sound basis for the estimation of output in each of the NNA industries specified in wholesale and retail trade.

3.13.11 The **SBS for NACE G**, annual accounting based, is the main source for the production estimates in the NNA. Data are obtained from the Income Statements (NO) and a supplementary form. Definition of output from these structural business statistics is already provided in section 3.4 above. **Holding gains and losses are excluded** from output as nothing in the guidance to the Income Statements suggest that holding gains and losses are included. The SBS data are available **also by version of local KAUs** (for turnover, compensation of employees, investments and employment), in addition to the enterprise-based version.

3.13.12 **Annual surveys of car repair shops etc.** are also covered by annual SBS-based accounting statistics (main source above).

3.13.13 Trade margins are **estimated from the supply side as well as from use side**. The **total supply of trade margins is taken from the SBS**. Trade margins are produced not only in NACE G, but also as secondary output in most other industries. Also, transport industries supply trade margins. On the other side, we have **margin coefficients** related to the use of **every relevant product differentiated by product and user**. So, products generally have higher trade margins when used for household consumption than as intermediate consumption. Trade margin coefficients related to uses of products are estimated from the **surveys of trade margins** in retail and wholesale industries. In

addition to the periodic surveys, data from CPI is used to update the trade margins for products for household consumption. The trade margin rates are **corrected in case of important imbalances between (aggregate) supply and use of trade margins**.

3.13.14 The last **periodic survey of trade margins** was conducted by Statistics Norway for the year 2008 and was used in the revised NNA for benchmarking the trade margins for the year 2009. The survey covered wholesale and retail trade margins for 2008 and data collection took place from December 2009 to early 2010. The survey was modelled after other surveys of trade, like the SBS and turnover by product. It was a sample survey, with enterprise as reporting unit, who was asked about turnover and costs for sales of about 100 product groups. The basic assumptions for use of survey results in the SUT were: households buy from retailers - wholesale and retail margins apply, while business and government institutions buy from wholesalers - wholesale margins apply. Finally, adjustments were made to the rates or margins in the SUT balancing process.

3.13.15 Output in wholesale and retail trade is - in the context as **trade services** - specified by 6 characteristic and some 20 non-characteristic NNA-products (or 10 non-characteristic products if consolidated at the level of wholesale and retail trade combined). Illustration by 2019 figures by these trade services follows for the consolidated version.

Output in wholesale and retail trade. NOK billion in 2019.

<i>Characteristic output</i>		
451 007 Trade services of motor vehicles	40.3	SBS
451 009 Registration tax on existing motor vehicles	1.3	Government accounts
452 010 Repairs on motor vehicles	36.9	SBS
452 030 Car washing	0.9	SBS
454 050 Repairs on motorcycles	0.6	SBS
460 007 Wholesale trade services	203.1	SUT estimations/SBS
470 000 Sales provisions and commissions	56.5	SBS
470 007 Retail sale services	162.0	SUT estimations/SBS
<i>Non-characteristic output</i>		
	12.9	Includes own account investment work, repair services of goods for personal use, renting services of buildings, cars and machinery, R&D and food serving services
Total output	469.3	

3.13.16 Apart from trade margins (wholesale and retail trade services aligned to goods), there are **two minor items** - technically speaking - that belong to characteristic production of their respective industries. They are **commission services** and **registration tax on existing motor vehicles**, in 2019 amounting to some NOK 7.9 billion or 1.7 per cent of total output of wholesale and retail trade. The sources in these cases are the accounting statistics and the central government accounts, respectively.

Intermediate consumption

3.13.17 In the NNA, **intermediate consumption** in these industries is estimated at NOK 210.4 billion in 2019. The number of NNA-products is typically around 40.

3.13.18 **Main sources used** are:

- Annual SBS, accounting based

3.13.19 The SBS data are available **also by version of local KAUs** (for turnover, compensation of employees, investments and employment), in addition to the enterprise-based version. Data are obtained from the Income Statements (NO) and a supplementary form (see chapter 10 for more details). Definition of intermediate consumption from these structural business statistics is already provided in section 3.4 above. Special problems are experienced in IT-related sales etc. in distinguishing between output and intermediate consumption (installation costs etc.).

3.13.20 **Annual surveys of car repair shops etc.** are covered by annual SBS-based data that are used for intermediate consumption also.

3.13.21 The following table is an excerpt from the Process table of NACE G, summarizing the source data and adjustments made for the year 2019. As seen from the table output and intermediate consumption have basis in annual combined data sources (SBS). The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, but also adjustments through balancing.

NACE G Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrap +Models</i>		
<i>Output</i>	0	0	477162	0	0	0	0	0	0	477162
<i>IC</i>	0	0	201405	0	0	0	0	0	0	201405
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>		<i>Explicit Cut-off</i>	<i>Explicit exhaustive-ness</i>		<i>Balancing</i>			
<i>Output</i>	0	-35456		0	0		27559	469265		
<i>IC</i>	0	-9000		0	0		18006	210411		

3.14 Transportation and storage (H)

Contents

3.14.1 In the NNA, the activities of NACE H are **distinguished by 14 industries** within the five A64 headings:

49	Land transport; transport via pipelines	
491	Transport via railways	M
492	Taxi operation	M
493	Other passenger land transport	M
494	Freight road transport	M
495	Transportation via pipelines	M
50	Water transport	
501	Ocean transport and coastal water transport abroad, freight transportation	M
502	Ocean transport and coastal water transport abroad, passenger transportation	M
503	Inland water transport	M
504	Supply for oil activities	M
51	Air transport	
510	Air transport	M
52	Warehousing and support activities for transportation	
521	Services incidental to water transportation	M
522	Services incidental to other transport activities	M
523	Services incidental to air transportation	M
53	Post and courier activities	
530	Post and courier activities	M

3.14.2 In some of the industries (491, 495, 510 and 530), the structural situation is characterized by the presence of dominating **State monopolies or few producers** (although not always with the same extent as before).

3.14.3 **Transport via railways** is dominated by Vy, a state company. This corporation is, however, also a producer of other transport services such as scheduled motorbus transport and freight transportation. The infrastructure part (the roadway) is distinguished from the traffic part, the former being separated as a non-market producer (central government) and the latter treated as a market producer (public non-financial corporate sector). Bane NOR is a state company responsible for the railway infrastructure in Norway.

3.14.4 Transport via pipelines from the Norwegian continental shelf to other countries are included in Norwegian statistics if a Norwegian-registered unit owns (and operates) the pipeline, even if most of the pipeline is laid outside Norwegian territory. Gassco AS became operator for all transport of natural gas from the Norwegian continental shelf from 1st January 2002 and is a monopoly owned by the government. The pipelines themselves are owned by Gassled, in which 5 different corporations are participating (State company Petoro, partly state-owned Equinor and mostly foreign-owned energy companies).

3.14.5 In water transport three detailed NA-industries are identified. They are Ocean transport and coastal water transport abroad, freight transportation (501), Ocean transport and coastal water transport abroad, passenger transportation (502) and Inland water transport (503). The NA industry 503 is wider than NACE 50.3 and 504 (Inland water transport), a deviation that reflects topographic national conditions (transport on lakes and rivers is quite small in Norway, as opposed to transport along coastline and fjords). Units that operate ships in form of management have been included in industry 501. Offshore supply and support activities are included in the NNA industry 503. The activities of supply vessels were until a few years ago mainly directed towards installations on the Norwegian continental shelf, while they today constitute a substantial export industry.

3.14.6 The problem of defining units and residence is quite formidable in ocean transport. In the Norwegian computations, transportation activity is attributed to the country in which the **operator**, i.e., principal organizer of the vessel is resident, and the flag register criterion is regarded irrelevant. Ships owned directly by foreign companies can be registered in NIS - one of the two ship registers in Norway - as long as being operated by Norwegian shipping companies with head office located in Norway. The operation criterion in general works in the Norwegian situation, while the registration criterion does not. The flag of register is not used as a criterion since the 1980s. For the allocation of the ships, i.e., in the capacity as factors of production, the ownership criterion is employed.

3.14.7 In air transport, scheduled as well as non-scheduled transport is included, the latter also including air transport on charters. In 2019 the industry dominated by two large companies, Norwegian Air Shuttle ASA and Scandinavian Airline System (**SAS**). SAS has historically been the most important company operating in Norwegian air transport. The company was formed as a joint venture of 3 national companies in 1946. A joint Scandinavian corporation operates the traffic and the activities of this unit are treated in a common way in the NA of the three countries. The method used is to allocate transactions of the jointly operated unit to each of the countries concerned. This is done in proportion to their shares in the equity of the corporation (relative weights: 3/7 for Sweden, 2/7 for Denmark and 2/7 for Norway). The Norwegian government has sold all their shares, however 2/7 is still the national share of the unit. Norwegian Air Shuttle is a domestic unit. All the domestic air companies, and for recent years also the national share of SAS, are covered by the SBS.

3.14.8 Supporting and auxiliary transport activities are distinguished by three NNA-industries. Supporting water transport activities are specified separately, primarily for the national interest in constructing a wider industry area for water transport activities. Also support services for air transport is specified as separate industry.

3.14.9 Post and courier activities are dominated by the State monopoly – the Postal Service. Due to changes in IFRS16 regulation with implementation from financial year 2019, the IC has been adjusted whit 0.7 billion to account for the change in accounting methods for long term leases of property. For more detailed description of these changes in IFRS16 and how it has affected the NNA in 2019, see section 3.4.

3.14.10 Transport, storage and communication make a **contribution of 4.0 per cent to GDP** in 2019. Value added share of output is 33 per cent.

NACE H - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE H VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
49	Land transport, except transport via pipelines	99.4	56.8	42.6	29.7	1.4	1.2	1.2
49	Transport via pipelines	20.9	2.3	18.6	13.0	0.6	0.5	0.5
50	Ocean transport	130.6	104.0	26.7	18.6	0.8	0.8	0.7
50	Inland water transport and supply	34.0	22.4	11.6	8.1	0.4	0.3	0.3
51	Air transport	47.3	42.5	4.8	3.3	0.2	0.1	0.1
52	Warehousing and support activities for transportation	90.5	61.0	29.5	20.6	0.9	0.8	0.8
53	Postal and courier activities	19.4	9.4	10.0	6.9	0.3	0.3	0.3
NACE H		442.1	298.4	143.7	100.0	4.5	4.0	3.9

3.14.11 **Non-characteristic output** often includes non-residential renting services, commission services, fees for various services, trade services (trade margins) and own account investment work.

Output

3.14.12 **Main sources used** are:

NNA-industries	Main sources
491	Annual accounting statistics (SBS-based)
492	Annual accounting statistics (SBS-based)
493	Annual accounting statistics (SBS-based)
494	Annual accounting statistics (SBS-based)
495	Oil and gas activity statistics
501	Annual accounting statistics (SBS-based) Special survey on operating income and costs (TS) Statistics on external trade in services, non-financial enterprises (UT)
502	Annual accounting statistics (SBS-based) Statistics on external trade in services, non-financial enterprises (UT).
503	Annual accounting statistics (SBS-based)
510	Annual accounting statistics (SBS-based) Special survey on operating income and costs (TS) Quarterly accounting data of SAS

NNA-industries	Main sources
521	Annual accounting statistics (SBS-based)
522	Annual accounting statistics (SBS-based)
523	Annual accounting statistics (SBS-based)
530	Annual accounting statistics (SBS-based)

3.14.13 **Annual accounting statistics (SBS-based)** were introduced in the NNA in the 2002 main revision. Definition of output from this structural business statistics is provided in section 3.4 above. The SBS data are available **also by version of local KAUs**, in addition to the enterprise-based version.

3.14.14 Some comments on main source other than the SBS are given in the following. **Oil and gas activity statistics** also cover the **pipeline transport** industry. These statistics are collected in statistical forms, in the R-form set dealing with transport of crude petroleum and natural gas via pipelines, but also the A-form set is relevant including information on supporting activity onshore for the pipeline transport industry.

3.14.15 For **Ocean transport** the statistical unit is the shipping company. The standard **SBS based reports** are supported by additional information (TS) collected to cover operational income and costs in more detail. Income and costs from all ships operated by domestic shipping companies are included. The SBS as the main source for estimating output and intermediate consumption is supported by statistics on exports and imports of services. As between 80 and 90 per cent of output and intermediate consumption (operating costs) of the Norwegian shipping companies are exported and imported respectively, information on those cross-border transactions are important in assessing the totals on the production account of this industry. Consequently, the TS gives information also on transactions related to exports and imports which have to be aligned with those from the **External trade in services statistics for non-financial enterprises (UT)**.

3.14.16 **Annual accounting based SBS statistics of air transport companies** published by Statistics Norway cover all companies that have a license to operate and to provide air transportation services in Norway, for recent years also including the national part of SAS. The accounting data comprise the aviation workshops' activities (manufacturing). **Accounting data from the SAS** are processed by Statistics Sweden and subsequently communicated to the other Scandinavian capitals on a quarterly basis. A new round of discussions between the three involved countries on the treatment of the SAS in the Scandinavian NA took place in 2004, and again in 2019, concluding with an agreement to prolong the use of the ownership principle.

Railways

3.14.17 **In transport via railways**, the SBS data are the basis for the total output value supplemented by estimates for free travel. **Output is specified** by 2 characteristic NNA-products. In addition, there are 6 non-characteristic NNA-products specified. These are illustrated by 2019 figures:

Output in transport via railways. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
491 000 Passenger transportation services by railways	6.3	SBS-based data providing a basis,
492 000 Freight transportation services by railways	1.4	See above for present method.
<i>Non-characteristic output</i>		
	0.6	Includes fees for various services, advertising services, and own account investment work; all estimated from items of the main source
Total output	8.2	

3.14.18 Some clarifications on railways: **Free transport** is added from exhaustiveness considerations and estimated based on considerations related to compensation of employees. Free travel is estimated by using two methods combined. The first method is a percentage of wages (NO 5000) in the SBS; it varies between industries, known as 5 per cent in railways (NACE 491). The second method is the annual wage growth in the state company Bane NOR.

Taxi

3.14.19 **In taxi operation**, the SBS-based data are used, supplemented by adjustments for unregistered activity (pirate taxes) and tips. Adjustments are made for unregistered activity based on figures from previous year multiplied with the rate of annual growth in characteristic output in this industry.

Output is specified by one characteristic and four small non-characteristic products. See illustration below by 2019 figures.

Output in taxi operation. NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
493 200 Taxi services and rental services of passenger cars with operator	11.0	SBS-based data providing a basis, plus adjustment for unregistered activity plus estimate for tips
<i>Non-characteristic output</i>		
	0.1	Include advertising services (item of main source)
Total output	11.1	

Other passenger land transport

3.14.20 **Other passenger land transport** is estimated using the **SBS-based data**. **Output is specified** by 3 characteristic NNA-products. These are illustrated by 2019 figures:

Output in other passenger land transport. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
493 110 Tramway and suburban transportation services	3.5	SBS-based data, characteristic production in the relevant 5-digit NACE.
493 900 Scheduled motorbus transport	14.0	See above for present method.
493 930 Unscheduled other passenger land transport	3.7	See above for present method.
<i>Non-characteristic output</i>		
	0.3	Own account investment work, rental income, advertising services
Total output	21.5	

3.14.21 Included in bus transportation services is scheduled transportation by school buses, and bus transportation to and from airports. On the other hand, cable-operated passenger transportation - including ski lifts - is treated as sporting activities and other recreational services. Free transport is estimated on the same basis and considerations as described for transport via railways.

Freight road transport

3.14.22 **In freight road transport**, the **SBS-based** statistics are used as source. **Output is specified** by 3 characteristic and 8 non-characteristic NNA-products.

Output in freight road transport. NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
494 000 Freight transportation services by road	30.1	SBS-based data providing a basis.
494 120 Rental services of commercial freight vehicles with operator	4.6	See above for present method.
494 337 Freight transportation services by road, transport margin	23.2	
<i>Non-characteristic output</i>		
	0.7	Includes fees for various services and advertising services, estimated from items of main source
Total output	58.6	

Pipelines

3.14.23 In **transport via pipelines**, annual **oil and gas activity statistics** are utilized for the estimation of output. Since the NNA specifies two pipeline transport products, one for crude petroleum and one for natural gas, it has been necessary to identify which pipelines are used for each of the products. Furthermore, the part of output that is used as transport margin refers to pipelines on Norwegian territory - products 495 037 and 495 137. Products 495 010 and 495 020, however, are the pipelines from the Norwegian border to the terminals on foreign shores.

3.14.24 **Output is specified** in 4 characteristic NNA-products and 3 non-characteristic products. See illustration below by 2019 figures.

Output in transport via pipelines. NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
495 010 Transportation services via pipelines for crude petroleum	0.2	Data on volume and income received quarterly from the only operator of oil export pipes, Norpipe.
495 020 Transportation services via pipelines for natural gas	12.6	Item in R-form for total income from production, natural gas part; transport margin part is separated out
495 037 Transportation services via pipelines for crude petroleum, transport margin	2.0	See 495 010 above
495 137 Transportation services via pipelines for natural gas, transport margin	6.1	See 495 020 above
<i>Non-characteristic output</i>		
	0.1	Own investment in oil activity
Total output	20.9	

Water transport

3.14.25 In **ocean water transport and coastal water transport abroad**, the **SBS**-based statistics were developed relatively late, published for the first time in 2003 (for the reporting year 2001). The reporting unit in the SBS is the enterprise, reporting all income and costs related to all ships (either owned or contracted) operated by resident enterprises. This should give a better coverage of e.g., non-characteristic output and administration costs than when the ship was the reporting unit. Also, the use of the operation criterion means that the registration of the ships is of no relevance. From 1988 and up to now, passenger transportation by cruise ships has been of minimal importance in Norwegian output, following the flagging out of Norwegian shipping companies. Those shipping owners that specialised in operating cruise in earlier time closed down their Norwegian offices, and have for the last decades been operating their business from abroad. However, in recent years, cruises are organised by Norwegian units that predominantly operated ferries and scheduled coastal passenger transport in earlier years. In addition, some smaller firms mainly taking tourists on small boat trips are covered. Passenger transportation services by ferries between Norwegian ports and Denmark and England (or other countries) are recorded as characteristic of this industry when performed by Norwegian units of production. **Sea freight transportation services** are the main product of the industry. **Rental services of sea-going vessels with crew** are the other main product of the industry.

3.14.26 As from 2005, three closely related surveys are conducted to serve as basis for the NA and BoP estimations on ocean transport. The first is a standard register based annual **SBS** with basis in the NO for units classified in NACE 50 Water transport. The second named **Survey of operating income**

and costs for vessels in foreign going trade is an extension of the standard annual SBS with more information on type of income (type on transportation products), cost elements and also ratios for exports and imports, respectively. This can be seen as representing the **TS** (supplementary form) for this industry. The third is a quarterly sample survey covering the industry's exports and imports of services with detailed services products to serve both the NA and BoP purposes (**UT**). As income from abroad (exports) constitutes between 80 and 90 percent, it is important to assess the total output estimated from the SBS in the light of the exports from the UT. In total these three surveys supply data sufficient to estimate total output by product, intermediate consumption by product and exports from and imports to the industry by product. See also chapter 5 on exports of services.

3.14.27 Supply water transport covers activities of ships supplying and supporting offshore oil installations, earlier part of Ocean water transport but now classified in a separate industry under Inland water transport. **Output in ocean transport is specified** by 6 characteristic and 7 non-characteristic NNA-products. These are illustrated by 2019 figures below.

Output in ocean transport (2 industries). NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
501 010 Sea passenger transportation services	5.6	Item of main source (Survey of operating income and costs)
501 210 Sea other freight transportation	34.3	Item of main source
501 220 Sea freight oil products transportation services	14.8	Item of main source
501 230 Sea freight chemical and gas products transportation services	19.3	Item of main source
501 240 Sea dry bulk freight transportation services	12.6	Item of main source
501 900 Rental services of sea-going vessels with crew	33.0	Items of time-charter from Norwegians and time-charter hire from foreigners
<i>Non-characteristic output</i>		
	11.0	Include inland water transportation, rental services concerning vessels without operators, identified by items of main source, and other technical consultancy services - i.e. management services and R&D
Total output	130.6	

3.14.28 In inland water transport, the SBS-based statistics is the prime source. Total output is estimated from the SBS while other sources are used in addition for the product breakdown.

3.14.29 Output in inland water transport is specified by 6 characteristic and 7 non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in inland water transport (2 industries). NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
502 030 Sea and coastal water towing and pushing services	1.6	Based on SBS for towing and pushing industry
502 040 Supply transportation services for oil activity	16.9	Item from supply ships part of main source
503 010 Passenger and car transportation services in local inland water transport	7.3	Based on income Hurtigruta and fixed share of total output
503 020 Rental services of non-sea-going vessels with crew	0.7	Based on cost estimates
504 010 Freight transportation in inland water transport	3.4	Extrapolated value of item in Postal Service accounts and fixed share of total output
505 007 Water transportation, transport margins	1.9	Separated and treated explicitly
<i>Non-characteristic output</i>		
	2.3	Including ocean transport services
Total output	31.6	

Air

3.14.30 For **air transport**, the basis for the compilation of the SAS part is the **accounting data of the SAS consortium (Scandinavian Airline International)**, to which the Norwegian share of 2/7 has been applied. In the SAS accounts material, collected through a special quarterly survey, data are allocated among the three countries following the accruals principle. Differences between output figures based on the ownership rule and output figures based on the accruals principle are treated as exports / imports. In 2004 SAS was re-organized when 3 national operating companies (including SAS Norway) were separated from the joint SAS consortium. The re-organization did not however change the principles of the recording of the joint SAS consortium unit in the NA, only the size of the unit to be distributed between the three countries through ownership is affected. In 2009 the **organization process was reversed** by merging the 3 national SAS companies into the SAS consortium. The accounting data from the SAS are in SEK, which have to be converted to NOK by applying an average quarterly exchange rate.

3.14.31 Furthermore, the **annual accounting based SBS of air transport companies** are the source for air transport companies, and for recent year it also includes the joint SAS corporation, see chapter 3.4 for the rules of estimating output and intermediate consumption. The statistics also covers the helicopter transportation services to and from oil installations in the North Sea. When it comes to air transport there is also an additional survey of operating income and costs (TS) that is an extension of the standard annual SBS with more information on type of income and cost elements. The supplementary form of the SBS is utilized for distributing total production and intermediate consumption in this industry by the relevant products of the NNA.

3.14.32 Output in air transport is specified by 4 characteristic and 8 non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in air transport. NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
511 010 Passenger transportation services by air	34.0	Items of main sources; for SBS-based data: the supplementary form is used
511 020 Rental services of aircraft with crew	5.7	Items of main sources; for SBS-based data: the supplementary form is used
511 030 Passenger transportation services by helicopter for oil activity	3.7	Items of main sources; for SBS-based data: the supplementary form is used
512 110 Freight transportation services by air	1.2	Items of main sources; for SBS-based data: the supplementary form is used
<i>Non-characteristic output</i>		
	2.6	Include payments of fees for various services and trade services, i.e., trade margins, also estimated from main sources
Total output	47.3	

Support activities water

3.14.33 The **SBS-based statistics** replaced most former sources in 2002. Product identification is given by turn-over data at the most detailed NACE level.

3.14.34 Output in supporting water transport activities is specified by 3 characteristic products, all identified directly from the SBS, and 5 non-market characteristic NNA-products. These are illustrated by 2019 figures.

Output in supporting water transport activities. NOK billion in 2019 - Sources and methods.

<i>Market characteristic output</i>		
522 210 Port and waterway operation services	2.0	SBS-based data providing a basis.
522 220 Other supporting services for water transport n.e.c.	5.7	SBS-based data providing a basis.
522 910 Ship-broker services	5.9	SBS-based data providing a basis.
<i>Non-characteristic output</i>		
	0.9	
Total output	13.5	

Support activities other than water

3.14.35 For supporting activities of cargo handling and storage, other supporting land and air transport activities, **the SBS-based data** are utilized.

3.14.36 Freight transport agency services is the most significant product of this industry. **Output is specified** by 8 characteristic and 12 non-characteristic NNA-products, all in market production, as well as some non-market output. Allocation of the **SBS-data** to the NNA-products is more or less made directly from 5-digit NACE activity level. These are illustrated by 2019 figures:

Output in supporting activities of cargo handling and storage etc. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
521 000 Storage and warehousing services	2.9	SBS-based data providing a basis
522 140 Car parking services	3.5	SBS-based data providing a basis.
522 300 Supporting services for air transport	8.6	SBS-based data providing a basis.
522 400 Cargo handling services	2.2	SBS-based data providing a basis.
522 917 Freight transport agency services, transport margins	27.6	SBS-based data providing a basis.
522 920 Freight transport agency services	4.9	SBS-based data providing a basis.
522 990 Other supporting and auxiliary transport services	6.1	SBS-based data providing a basis.
522 997 Other supporting and auxiliary transport services, transport margins	11.4	Separated and treated explicitly
<i>Non-characteristic output</i>		
	8.8	Includes fees for various services and advertising services, estimated from source items
Total output	77.0	

Post and courier activities

3.14.37 The **SBS** has been utilized as source since main revision in 2002.

3.14.38 **Output in postal and courier activities is specified** by 4 characteristic and 6 minor non-characteristic NNA-products. See illustration below by 2019 figures.

Output in postal and courier activities. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
530 000 Postal and courier services	16.1	SBS-based data providing a basis.
531 010 Newspaper distribution	1.9	SBS-based data providing a basis.
531 030 Postal settlements with abroad	1.0	SBS-based data providing a basis.
531 040 Services to Post Office Savings Bank	0.2	SBS-based data providing a basis.
<i>Non-characteristic output</i>		
	0.2	Include commissions, trade margins, rent on property and own account investments, estimated from items of main source
Total output	19.4	

Intermediate consumption

3.14.39 In the NNA, **intermediate consumption in transportation and storage** is estimated at NOK 298.4 billion in 2019.

3.14.40 **Main sources** used for intermediate consumption are mostly the same main sources as used for the estimation of output, i.e., the **SBS data**. In general, therefore, the list of sources provided above

for output should be referred to. One global adjustment is carried out for all industries in terms of FISIM being added to the source data.

3.14.41 For **transport via railways**, the **SBS data** are utilized for intermediate consumption (see section 3.4 for items covered), but the former main source is still providing details to the estimation, in particular, for the distribution on the NNA-products.

3.14.42 Total intermediate consumption for **taxi operation** was estimated from using the **SBS data**. For product specifications, special estimations are made from energy accounts on relevant NNA-products.

3.14.43 For **other land transport**, the **SBS data** are used. For product specifications, price and quantity information for energy products has been made use of. Statistics Norway keeps an **energy account** recording energy use by industry. This is an elaboration of energy balances, but energy for transportation purposes is distributed by industry of the user (and use for household consumption). These energy accounts are used for analyses of energy use and environmental statistics and use. They are kept in physical units, so estimates of value can be done by multiplying the quantity data by unit prices. Suitable unit prices are available in the energy statistics.

3.15.44 The **oil and gas activity statistics** are utilized for estimating intermediate consumption in **transport via pipelines**. Product items such as lubricating oil, catering services, helicopter transportation services, supply transportation services, engineering design services, and rental services of machinery and equipment are identified from R-forms as Norwegian share is concerned. The same applies to repairs of pipelines but adjusted for compensation of employees. Item for other production costs is distributed on remaining NNA-products, except the NNA-product for operating costs abroad (the latter covers the import share of intermediate consumption in the NNA). Imported intermediate consumption for the pipeline transport industry is not identified, i.e., import shares are not specified in the R-forms like in other forms of statistics of oil activities. Direct import deliveries for intermediate consumption in this industry are estimated while making certain assumptions about import shares for the pipelines.

3.14.45 For **ocean transport and coastal water transport abroad**, the sources used for estimating intermediate consumption were the same as for the output estimation. See also chapter 5 on imports of services.

3.14.46 The supplementary form (TS) of the SBS is utilized for distributing total intermediate consumption in this industry by the relevant products of the NNA. Other considerations - energy accounts information and commodity-flow analysis etc. - are also taken into account in this respect. The recordings distinguish between domestic and foreign (which identifies transaction of imports). As 80 – 90 per cent of the operating expenses occurs abroad, the total intermediate consumption estimated based on the SBS is balanced against data from the statistics on imports of services (UT).

3.14.47 Total intermediate consumption of the **inland water transport industry** was estimated from the **SBS data** and used for specific items, while combined with distribution keys obtained from the 1995 revision for non-specified part of the products (products that might be adjusted further in the balancing procedure).

3.14.48 The accounts and **accounting statistics** of the SAS Consortium are utilized for the estimation of intermediate consumption of the SAS part of **air transport**, while **the SBS data** were brought in as well and used similarly to what has been described above for output (the SBS and SAS data in combination etc.). The most important product items are repairs of aircraft, fuel expenditures and operating expenditures abroad. Fuel purchased abroad has been included in the latter item but may be extracted and treated as a separate item. In estimating intermediate consumption from the **SAS accounts**, financial costs, costs of workshops, depreciation costs and personnel costs are all deducted

from total costs. The Norwegian part is again derived by using the share of 2/7 and by converting values from SEK to NOK. Intermediate consumption of Norwegian air transport companies other than those of the SAS Consortium includes items for scheduled air transport, other large air transport companies and small air transport companies.

3.14.49 For **other supporting water transport activities**, the estimation of intermediate consumption is made by utilizing **the SBS data**. In the NNA-industry 651, total intermediate consumption is estimated equal to the SBS total, while distributed on the NNA-products by using keys obtained previously.

3.14.50 For **supporting activities of cargo handling and storage, other supporting land and air transport activities, the SBS data** are used.

3.14.51 The **SBS-based data** were utilized for the estimation of intermediate consumption of **post and courier activities**, also at the detailed product level of intermediate consumption. However, energy accounts and the annual accounts of the Postal Service are also utilized to support the SBS-based data.

3.14.52 The following table is an excerpt from the Process table of NACE H, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in administrative records and combined data sources (SBS). The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, adjustments for explicit exhaustiveness and also some balancing.

NACE H Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrapolation + Models</i>		
<i>Output</i>	0	20963	420501	0	0	0	0	0	875	442339
<i>IC</i>	0	2102	301003	0	0	0	0	0	0	303105
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>		<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>		<i>Balancing</i>			
	<i>Output</i>	0	200		0	1853		-2304	442088	
<i>IC</i>	0	-1803		0	-777		-2184	298341		

3.15 Accommodation and food serving activities (I)

Contents

3.15.1 In the NNA, the activities of NACE I are **distinguished by 2 industries** within the one A64 heading:

55-56 Accommodation and food serving activities

550	Accommodation services	M
560	Food serving activities	M

3.15.2 Coverage of the NNA industry 550 is defined to include hotels and motels irrespective of accompanied restaurants or not. **Coverage of the NNA industry 560** is defined to include the total of NACE items of restaurants, bars, and canteens and catering.

3.15.3 Hotels and restaurants services make a **contribution of 1.3 per cent to GDP** in 2019. Value added share of output is 47 per cent in 2019, which is lower than the national average.

NACE I - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE I VA	Total VA	GDP	GNI
55-56	Accommodation and food service activities	101.1	53.6	47.5	100.0	1.5	1.3	1.3
NACE I		101.1	53.6	47.5	100.0	1.5	1.3	1.3

3.15.4 Characteristic items in **accommodation** include in principle sleeping car services and sleeping services in other transport media operated by individual enterprises and covered by the SBS. There are however, no such enterprises in Norway currently.

3.15.5 Non-characteristic output is rather insignificant, including non-residential renting services, commission services, trade services (trade margins) from sale of souvenirs, maps, books, newspapers etc., plus own-account construction (quite small).

Output

3.15.6 Main source used is:

- Annual accounting based SBS

3.15.7 Annual SBS was introduced in the NNA in the 2002 main revision. Definition of output from this structural business statistics is already provided in section 3.4 above. Output thus is based on turn-over as defined in the accounting-based NO and includes the value of food and drink consumed. The SBS data are available **also by version of local KAUs**, in addition to the enterprise-based version.

3.15.8 Tourist accommodation statistics and turnover by VAT classes collected for the turnover index are being used as supplementary sources to the SBS, to allow for the output to be allocated to the characteristic products as well as to relevant consumption items by COICOP.

3.15.9 Added to the SBS source are **adjustments made for unregistered activities, wages and salaries in kind** and estimate for **tips** (exhaustiveness considerations). All adjustments included raise the SBS-level by 6 per cent to arrive at the NNA. It should be reminded that the SBS-based statistics have been adjusted to the NA definitions (see section 3.4) before adding in the adjustments mentioned and illustrated below.

Adjustments for exhaustiveness made NACE I. 2019.

	<i>NOK million</i>	<i>Per cent of total output</i>
Unregistered activities	4910	4.9
Wages and salaries in kind	1017	1.0
Tips	289	0.3
Total	6216	6.1

3.15.10 **Unregistered activities** are accounted for in the NA estimations, since such activities and turnover are known to take place in this industry (in restaurants particularly), while not registered in the SBS statistics. Basis for making this kind of estimate is not readily available. According to Directorate of Taxes, some survey data indicate substantial spread of such activities, particularly in the big cities. The assumption made in the NNA - in lack of more explicit information - is to add 7.5 per cent to the SBS-based output on food serving services and beverage serving services. According to estimates by the tax authorities, this is a likely level. It is assumed that unregistered output in accommodation activities is relatively unimportant.

3.15.11 **Wages and salaries in kind** are estimated as additional income for employed people in hotels and restaurants. Valuation is made on cost of production principle to reflect meals in canteens or kitchens rather than restaurants. Thus, average cost is calculated per employee per day (differentiated amounts for employees and self-employed) and grossed up accordingly to provide a level. The changes in this level follow the changes in output.

3.15.12 Tax authorities estimate a 3 per cent addition **for tips** to registered wages for those waiters and waitresses who do not report tips, and this percentage is used in the NA estimations as well, calculated on half of employed people in restaurants and cafes (explicit information on numbers of waiters/waitresses is not available) and all employees in bars.

3.15.13 Output of hotels and other accommodation is specified by 5 characteristic and 9 non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in hotels and other accommodation. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
551 000 Hotel and similar accommodation services	17.5	Items of main source, distributed on NNA-product
553 000 Camping and cabin services	1.6	Items of main source, distributed on NNA-product
559 090 Other accommodation services	0.2	Items of main source, distributed on NNA-product
561 010 Restaurant food serving services	12.7	Items of main source, distributed on NNA-product, partly produced in hotels besides in restaurants. Additional sources (VAT-statistics) are utilized for this distribution.
563 000 Beverage serving services	0.7	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	1.5	Includes rental services of non-residential property, commission services, trade services (trade margins) from sale of goods, and a minor amount of own-account construction
Total output	34.2	

3.15.14 Output of restaurants, canteens and catering is specified by 4 characteristic and 9 non-characteristic NNA-products. These are as well illustrated by 2019 figures:

Output in restaurants etc. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
561 010 Restaurant food serving services	44.1	Items of main source, distributed on NNA-product, partly produced in hotels besides in restaurants. Additional sources are utilized for this distribution.
561 020 Mobile food serving services	5.0	
562 000 Canteen and catering services	11.6	Items of main source, distributed on NNA-product
563 000 Beverage serving services	2.9	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	3.3	Includes rental services of non-residential property, commission services, trade services (trade margins) from sale of goods, contract work, fees for various services and of own-account construction
Total output	66.9	

Intermediate consumption

3.15.15 In the NNA, **intermediate consumption** in accommodation and food services is estimated at NOK 53.6 billion in 2019. There are approximately 45 NNA products specified in each of the two industries.

3.15.16 Main source used is:

- Annual accounting based SBS

3.15.17 Structural business statistics are used following procedures described by definitions given in section 3.4 above.

3.15.18 Product details (in relative terms) are available just **for some scattered groups**, such as detergents, toilet articles etc. The enterprises provide information on their intermediate consumption divided into food, beverages and other in the SBS. This information is used to compute the figures on an annual basis. There are **other sources**. Statistical information from **the State Wine Monopoly** includes sale of wine and spirits to beverage serving units. Statistical information from **the Brewers' Association** includes litres of beer sold for each of the tax classes of beer when delivered from brewery to restaurant. There are also statistics providing information on **energy products**, although some adjustment was deemed necessary. Product details for item other expenditures are not available, however. Eventually, commodity-flow method, spreadsheets and analysis on detailed products are used to arrive at intermediate consumption of the industry broken down by the 45 NNA products. The procedure of estimation described is basically the same each year.

3.15.19 Exports and imports of hotel and restaurant services take place through **three channels**. **First**, the figures for the Travel item include all expenses that residents meet on travels abroad. Hotel and restaurant services are in most cases produced and consumed at the same place and time, and subsequently only exported when the consumer is non-resident and have travelled to Norway from his/her home country. The output and intermediate consumption figures are calculated without regards to the country of residence of the consumer of the services. For non-residents consuming hotel and restaurant services in Norway, this is however included in final consumption of non-residents and RoW/travel figures. The calculations are based on travels surveys and accommodation statistics. The latter is based on EU regulation 692/2011. For residents consuming hotel and restaurant services outside Norway, this is included in final consumption of resident households abroad and in the RoW/travel figures. The main source is the travel survey based on EU regulation 692/2011. **Secondly**, domestic tour operators import services from partners abroad in the design of tour packages sold to the consumers. The domestic tour operators are asked about their intermediate consumption of accommodation and food serving services, which is used as input when computing the travel imports. In the NNA these imports expenditures are recorded in one product item, which includes both hotel and restaurant services. **Finally**, catering services are exported and imported by/to inter alia airlines, ferry companies and oil industry companies. The source for both exports and imports of catering services are the quarterly sample survey of the SN.

3.15.20 The following table is an excerpt from the Process table of NACE I, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources (SBS). The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, and adjustments for explicit exhaustiveness.

NACE I Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	Extrapolation and Models					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrap +Models</i>		
<i>Output</i>	0	0	95789	0	0	0	0	0	0	95789
<i>IC</i>	0	0	55139	0	0	0	0	0	0	55139
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>	<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>	<i>Balancing</i>					
<i>Output</i>	-876	-12	0	6216	-3	101114				
<i>IC</i>	-876	-619	0	0	-1	53643				

3.16 Information and communication (J)

Contents

3.16.1 In the NNA the activities of NACE J are **distinguished by 6 industries** within 4 A64 headings:

58	Publishing	
580	Publishing	M
59-60	Motion pictures, sound recordings and broadcasting	
590	Motion picture, video and television programme production, sound recording and music publishing	M
600	Programming and broadcasting	M
61	Telecommunications	
610	Telecommunications	M
62-63	Computer programming and services, information service activities	
620	Computer programming, consultancy and related activities	M
630	Information service activities	M

3.16.2 These six industries are all **market activities**.

3.16.3 It should be noted that section J is one of the major new inventions of NACE rev.2. The units within this section were in the former classification classified in different sections. For example, they were units involved in publishing part of the manufacturing section. Also, units as part of the former sections K Business services and O Other social and personal services are now part of the new section J.

3.16.4 NACE J accounted for 4.1 per cent of GDP in 2019. The share of value added to output was 51.3 per cent.

NACE J - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE J VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
58	Publishing activities	45.1	22.0	23.1	15.9	0.7	0.6	0.6
59-60	Motion picture and video program production, broadcasting	25.4	14.8	10.6	7.3	0.3	0.3	0.3
61	Tele-communications	74.7	37.8	36.9	25.4	1.2	1.0	1.0
62-63	Computer programming and related activities	137.3	62.9	74.4	51.3	2.4	2.1	2.0
NACE J		282.4	137.5	145	100.0	4.6	4.1	3.9

Output

3.16.5 According to the principles of industry classification, the producing units are classified according to the largest contribution to the value added generated by the unit. Most output is characteristic products.

3.16.6 In industry section J it is common for units to be involved in several activities. Thus, secondary output is quite common. In publishing, printing services are recognized as non-characteristic output. In addition, typical non-characteristic products are rental services, commission services, trade services (trade margins), own-account investment work and R&D.

3.16.7 **Main source** used is:

- Annual accounting based SBS

Publishing activities

3.16.8 In publishing **output is specified** by 6 characteristic products. These are illustrated in 2019 figures:

Output in publishing. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
581 100 Books	3.5	Items of main source, distributed on NNA-product
581 310 Newspapers	4.2	Items of main source, distributed on NNA-product
581 330 Advertisements	6.9	Items of main source, distributed on NNA-product
581 400 Weeklies and magazines	4.5	Items of main source, distributed on NNA-product
581 900 Other publishing services	0.7	Items of main source, distributed on NNA-product
582 000 Software publishing	19.3	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	6.1	Includes printing services, rental services of non-residential property, commission services, R&D and a minor amount of own-account investment work
Total output	45.1	

Motion pictures and sound recording etc.

3.16.9 In Motion pictures, video and television programme production, sound recording and music publishing activities, **output is specified** by 4 characteristic products, here shown with 2019 figures:

Output in motion pictures, sound recordings and broadcasting. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
591 010 Production of motion pictures and TV programmes	5.4	Items of main source, distributed on NNA-product
591 020 Reproduced motion pictures and TV programmes	2.4	Items of main source, distributed on NNA-product
592 010 Music and sound recordings, originals	0.9	Items of main source, distributed on NNA-product
592 020 Music and sound recordings, reproductions	1.2	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	1.5	Includes rental services of non-residential property, commission services, trade margins from sale of goods, own-account investment work and minor amounts of R&D
Total output	11.5	

Radio and TV broadcasting

3.16.10 Output is here specified by 2 characteristic products. The 2019 values are:

Output in radio and TV broadcasting. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
600 010 Broadcasting, license	6.0	Items of main source, distributed on NNA-product
600 020 Broadcasting, advertisements	7.0	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	1.0	Includes rental services and minor amounts of own-account investment work
Total output	13.9	

Telecommunication

3.16.11 Output in telecommunications is specified by 4 characteristic NNA-products. These are illustrated by 2019 figures:

Output in telecommunications. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
611 000 Cable based telecommunication services	24.3	Items of main source, distributed on NNA-product
612 000 Wireless telecommunication services	33.5	Items of main source, distributed on NNA-product
613 000 Satellite transmission services	9.9	Items of main source, distributed on NNA-product
619 000 Other telecommunication services	2.7	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	4.2	Includes payments of fees for various services, R&D and own-account investment work
Total output	74.7	

Computer services

3.16.12 Output is specified by 4 characteristic NNA-products. These are illustrated by 2019 figures:

Output in computer and related services. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
620 100 Programming services	34.2	Items of main source, distributed on NNA-product
620 200 Computer technology consultancy services	56.7	Items of main source, distributed on NNA-product

620 300 Management and operation of IT-systems	18.6	Items of main source, distributed on NNA-product
620 900 Other computer related services	0.3	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	12.0	Includes own account investment work, rental services, R&D, commission services and minor amounts of trade services (trade margins)
Total output	121.9	

3.16.13 Computer services is the largest NNA industry within section J, contributing 43 per cent of the total output value within the industry. Measured by value added, the industry contributes 46 per cent.

Information services

3.16.14 In information services **output is specified** with 4 characteristic products, shown here with 2019 figures:

Output in information services activities. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
631 100 Data processing, data storing and related services	7.4	Items of main source, distributed on NNA-product
631 200 Operation of web portals	5.9	Items of main source, distributed on NNA-product
639 200 News agencies services	0.4	Items of main source, distributed on NNA-product
639 900 Other information services	0.4	Items of main source, distributed on NNA-product
<i>Non-characteristic output</i>		
	1.2	Includes rental services of non-residential property, commission services, R&D and minor amounts of trade services (trade margins) from sale of goods and own-account investment work
Total output	15.4	

Intermediate consumption

3.16.15 **Intermediate consumption** in industry section J is estimated at NOK 144.9 billion in 2019. The number of products specified varies between 37 and 80, with publishing having the most products and radio and TV broadcasting having the least.

3.16.16 **Main source used** is the same as for output:

- Annual accounting based SBS

3.16.17 The **SBS data** are used for the estimation of intermediate consumption by the NNA products in all NNA industries of section J, supplemented by data from energy accounts and estimated FISIM data. For three of the detailed industries some items of the NO have been reallocated from intermediate consumption to gross fixed capital formation.

3.16.18 As a result of the introduction of **IFRS 16** in 2019, corrections were made to intermediate consumption for industries 610 and 620 amounting to 800 and 600 million NOK, respectively.

3.16.19 The following table is an excerpt from the Process table of NACE J, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources (SBS). The adjustments made are of a conceptual nature to transform data in the sources into the National Accounts definitions, and adjustments through balancing.

NACE J. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrapolation +Models</i>		
<i>Output</i>	0	0	269998	0	0	0	0	0	0	269998
<i>IC</i>	0	0	143006	0	0	0	0	0	0	143006
	Adjustments						Final estimate			
	<i>Data validation</i>	<i>Conceptual</i>	<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>	<i>Balancing</i>					
<i>Output</i>	0	12414	0	19	0	282431				
<i>IC</i>	570	-7418	0	13	1400	137571				

3.17 Financial intermediation (K)

Contents

3.17.1 In the NNA, the activities of NACE K are **distinguished by 7 industries** within the three A64 headings:

64	Financial intermediation services, except insurance and pension funding	
641	Central banking	M
642	Other monetary intermediation	M
649	Other financial intermediation	M
65	Insurance and pension funding services, except compulsory social security services	
651	Life insurance	M
652	Non-life insurance	M
653	Pension funding	M
66	Services auxiliary to financial intermediation	
660	Activities auxiliary to financial intermediation	M

3.17.2 These are all **market activities**. **Pension funding** adds to life and non-life insurance, while **activities auxiliary to financial intermediation** are distinguished from other financial intermediations.

3.17.3 With respect to the coverage of **credit institutions** - both NACE 64 Financial intermediation excluding insurance and pension funding and NACE 66 Activities auxiliary to financial intermediation - most institutions are subject to government supervision and hence covered in the basic statistics. They also cover consumer credit institutions and credit card companies. **Unit trusts** - part of the NNA-industry 649 - and part of activities auxiliary to financial intermediation - are covered through separate estimates. **Financial leasing** is treated as loan from financial institutions, and the Accounting Act of Norway emphasizes that the leased assets are to be recorded and **shown explicitly in the balance sheets of borrowers**. Inconsistencies could however occur for small enterprises that might record leasing expenses as intermediate consumption (amount involved is quite small, however). As to the problems on coverage of **foreign credit institutions**, the activity on the domestic territory is subject to government supervision (this is not the case for corresponding Norwegian units abroad).

3.17.4 With respect to the coverage of **insurance companies**, the situation is quite similar to that of credit institutions described above. The borderline between insurance enterprises and social security funds conforms to ESA and SNA rules. It could also be mentioned here that there are no specialized re-insurance companies in Norway. Re-insurance is thus an activity performed solely by direct insurance companies.

3.17.5 Financial intermediation services make a **contribution of 4.3 per cent to GDP** in 2019. Value added share of output is 65 per cent in 2019, which is a typical high ratio found among services industries.

NACE K - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE K VA	Total VA	GDP	GNI
64	Financial service activities, except insurance and pension funding	172.5	58.0	114.4	74.6	3.6	3.2	3.1
65	Insurance, except compulsory social security	33.1	9.9	23.2	15.1	0.7	0.7	0.6
66	Activities auxiliary to financial services and insurance activities	29.6	13.8	15.7	10.3	0.5	0.4	0.4
NACE K		235.1	81.8	153.3	100.0	4.8	4.3	4.2

Output

3.17.6 The adoption of the EU regulation on the allocation of FISIM in the 2006 main revision also introduced a new method in estimating **FISIM output**, which is in accordance with ESA 2010 as well. The new method makes use of additional types of data compared to before and more refined estimation procedures. This is explained more in detail in paragraphs 3.17.10 – 3.17.18.

3.17.7 **Main sources used** are:

- Credit market statistics, accounting data organized in database ORBOF for banks
- Credit market statistics, accounts of insurance companies in database FORT
- Credit market statistics, accounts of pension funds in database PORT
- Credit market statistics, accounts of other financial institutions
- Accounting statistics for auxiliary services to financial intermediation
- Domestic interest rates, Norges Bank's web site
- International interest rates, ECB's web site

3.17.8 **Credit market statistics** produced by Statistics Norway cover accounts of **all financial enterprises**. These units comprise Norges Bank (i.e., the central bank of Norway), commercial banks, savings banks, state banks, credit enterprises, financial companies, life insurance companies, non-life insurance companies, private pension schemes, municipal pension schemes, joint pension under Collective Agreements etc., and unit trust and mutual investment fund.

3.17.9 The credit market statistics are **processed through several stages** before becoming the NNA estimates of output of financial intermediation. The re-coding catalogues link items of credit market statistics to items of national accounts through established converting keys. These are general in the sense that they are used for all years, until specifications in the credit market statistics are altered.

Holding gains and losses are identified in specified items in the reports and **are excluded** from the measurement of output of financial intermediation.

FISIM output

3.17.10 FISIM is calculated for the financial intermediation enterprises (excluding Norges Bank, the central bank), both for the NNA industry 642 and industry 649. The estimates are based on information on the stocks of loans and deposits and interest margins, i.e., differences between actual interest rates received/paid on those stocks and a chosen reference rate. The sectors producing FISIM comprise private banks, state lending institutions (excluding the central bank), mortgage companies and finance companies, i.e., sub-sectors S122 and S125.

3.17.11 FISIM outputs of the financial enterprises are **calculated by customer or user sector**, i.e., for non-financial corporations, general government and households, and for rest-of-the world in terms of exports and imports, on loans and deposits these sectors have with the financial corporations involved. Total FISIM for each sector is obtained by adding the two components FISIM on loans and FISIM on deposits. FISIM on loans is calculated by multiplying stock of loans by the difference between the rate of interest on loan and a chosen reference rate, while FISIM on deposits is calculated by multiplying stock of deposits by the difference between the reference rate and the rate of interest on deposits. Grand total FISIM is the sum over all sectors.

3.17.12 Stock data and interest data are available by domestic sector from the monetary statistics compiled by Statistics Norway and Norges Bank. For more details, see chapter 10 on main sources used. The reference chosen as interbank interest rate is NIBOR (3-monthly efficient rate for the domestic part, see <http://www.norges-bank.no/en/price-stability/interest-rates/>).

3.17.13 The reference rate chosen for the international part is EURIBOR (360 Day) 3 month, Fixing, see <http://www.euribor-ebf.eu/euribor-org/euribor-rates.html>. Initially also the corresponding 3-monthly rates LIBOR for USA and TIBOR for Japan were selected for use, but because of lack of stock data, these interest rates were abandoned. Most of the stocks are in the EURO area anyway.

3.17.14 Actual interest rates on deposits and loans are available from Statistics Norway. The interest rates chosen are described in the following table:

Interest rates used for FISIM calculations.

	<i>Sector</i>	<i>Interest rates on</i>
<i>Deposits</i>	Households	Deposits with agreed maturity up to 1 year
	Corporations & general government	Deposits with agreed maturity up to 1 year for non-financial corporations.
<i>Loans</i>	Households	House purchase - floating rate and up to 1 year initial rate fixation
	Corporations & general government	Other loans over EURO 1 million: Floating rate and up to 1 year initial rate fixation

See <https://www.ssb.no/en/bank-og-finansmarked/finansinstitusjoner-og-andre-finansielle-foretak/statistikk/renter-i-banker-og-kredittforetak>

3.17.15 The interest flows are calculated based on sector specific information on the stocks and the interest rates. A weighted average based on the maturity within each sector for the rates is used. From the sources it is for example known that sector S122 lends an amount, X, of short-term debt (STD) and an amount, Y, of long-term debt (LTD) to sector S14. The rates are then calculated based on the ratio STD/TD and LTD/TD. The following table show the sector involved in the FISIM calculations. The actual estimations are carried out at a more detailed level of disaggregated financial sub-sector and level of customer sector than showed in the table.

Sector level in estimation of FISIM related interest flows. 2019.

<i>Financial sector</i>		<i>Customer sector</i>	
122010	Banks, government owned	110099	Other
122020	Banks, private national owned	110114	Central government owned non-financial limited enterprises
122030	Banks, foreign controlled	110115	Local government owned non-financial limited enterprises
125110	Mortgage companies, government owned	110126	Private national owned non-financial limited enterprises
125120	Mortgage companies, private national owned	110136	Foreign controlled non-financial limited enterprises
125130	Mortgage companies, foreign controlled	110214	State-run enterprises
125210	Finance companies, government owned	110215	Local government owned non-financial unlimited enterprises
125220	Finance companies, private national owned	110226	Private national owned non-financial unlimited enterprises
125230	Finance companies, foreign controlled	110236	Foreign controlled non-financial unlimited enterprises
127111	State lending institutions	110326	Trade organisations, national owned
		131100	Central government
		133100	Local government
		140100	Housing co-operatives
		140201	Self employed
		140202	Households
		150000	Non-profit institutions serving households
		200000	Rest of the world

3.17.16 The following table illustrates through a numerical example the stages of calculations from source data to final NA data on FISIM output.

Total production of FISIM for the sector banks.NOK millions. 2019.

3.17.17 Imports (and exports) of FISIM are estimated based on data from the same sources as described above. Total exports of FISIM are derived by adding the two components FISIM on loans from relevant financial institutions to non-residents and FISIM on deposits in relevant financial institutions from non-residents. FISIM on loans to non-residents is calculated by multiplying stock of

loans by the difference between the actual rate of interest on loan and a chosen external reference rate, while FISIM on deposits is calculated by multiplying stock of deposits by non-residents by the difference between the external reference rate and the actual rate of interest on deposits.

<i>Year</i>	<i>Quarter</i>	<i>Production Sector</i>	<i>User sector</i>	<i>Stock of loans</i>	<i>Stock of deposits</i>	<i>Interest, loan*</i>	<i>Interest, deposit*</i>	<i>Reference rate*</i>	<i>FISIM loans**</i>	<i>FISIM deposits***</i>	<i>FISIM Total</i>
2019	1	122000	110000	1235981	758009	3.52	0.84	1.34	6767	958	7724
2019	1	122000	130000	12263	157739	0.53	1.57	1.34	9	0	9
2019	1	122000	140901	1562446	1331933	3.47	0.91	1.34	8335	1752	10087
2019	1	122000	200000	480980	1330725	1.92	1.24	1.34	1391	538	1929
2019	2	122000	110000	1267919	762511	3.66	0.91	1.52	6827	1161	7989
2019	2	122000	130000	15928	170546	0.44	1.74	1.52	9	0	9
2019	2	122000	140901	1527761	1376831	3.68	0.97	1.52	8256	2181	10438
2019	2	122000	200000	488749	1353735	1.97	1.37	1.52	1353	643	1995
2019	3	122000	110000	1287799	777114	3.84	1.03	1.77	6727	1440	8167
2019	3	122000	130000	21532	171163	0.35	1.93	1.77	9	0	9
2019	3	122000	140901	1503074	1400304	3.86	1.06	1.77	7859	2710	10569
2019	3	122000	200000	496565	1347707	2.12	1.49	1.77	1366	936	2303
2019	4	122000	110000	1302887	787224	4.01	1.12	1.84	7122	1419	8542
2019	4	122000	130000	26379	162504	0.35	1.99	1.84	12	0	12
2019	4	122000	140901	1517611	1386773	3.98	1.14	1.84	8131	2686	10817
2019	4	122000	200000	509798	1308162	2.16	1.58	1.84	1419	840	2260
Total											82859
*Annual interest rate											
**Formula = Stock of loans*((Interest rate, loan-Reference rate)/400)											
***Formula = Stock of deposits*((Reference rate-Interest rate, deposits)/400). (If interest, deposit greater than reference rate, FISIM deposit = 0)											

Allocation of FISIM

3.17.18 Output of FISIM is allocated to customer or user sectors and industries, including to the rest of the world (RoW), as either intermediate or final use, and thus affecting the main aggregates of final uses and GDP.

3.17.19 Results of this allocation are illustrated by figures for 2019 below.

FISIM allocated. 2019.

<i>FISIM items</i>	<i>NOK billion</i>
Total output	115.2
Output in banks	82.9
Output in other financial institutions	32.3
Imports	9.4
<i>Total supply</i>	124.6
Intermediate consumption	80.6
Final consumption expenditure	35.0
Exports	9.0
<i>Total uses</i>	124.6

3.17.20 Results of the allocation are illustrated further in terms of effect on the GDP.

FISIM allocated in NOK billion and percentages of GDP. 2019.

<i>FISIM items</i>	<i>NOK billion</i>
Total changes in GDP	34.6
Of which: final consumption expenditures	35.0
of which: Exports – Imports	-0.4
	<i>Percentages</i>
FISIM effect on the GDP	1.4
FISIM effect from final consumption expenditures	1.4
FISIM effect from exports less imports	- 0.0

3.17.21 Having presented the results, there is a need to go back and see how they are calculated. The first step of calculating FISIM by sector was described above. Next, **allocating to industries** is done by using the Eurostat method II, i.e., using as distribution key the output of the respective industries. In the NNA, there is a link between institutional sectors and the respective categories of industries (types of producers) through a cross classification in the SUT. The output share of an industry is multiplied with total FISIM to arrive at each industry's consumption of FISIM.

3.17.22 Allocating **between intermediate consumption and final consumption** is not at all easy in the case of **households**. It is assumed that 15 per cent of mortgage loans are made for final consumption (85 per cent for intermediate consumption in owner-occupied dwellings). Non-mortgage loans are also allocated to final consumption. This assumption is obviously rather sensitive for the estimation. For deposits, it is assumed that full allocation is made from NPISH sector to final consumption, and full allocation from household employers, corporations, etc. to intermediate consumption.

Output of other financial intermediation services

3.17.23 Output of other financial services **directly charged** by financial institutions within NACE 64 is estimated based on information from the same detailed reports as the estimation of FISIM is based upon. The following illustrates the detailed items from the source data used:

3.17.24 Accounting statistics **for auxiliary services to financial intermediation** are used for NACE 66. Specific data other than for security and insurance brokers are collected from published company accounts that are less detailed. **Unit trusts** are treated separately on the basis of annual reports (and total balance sheet), while production here is not estimated any longer (financial data apply only).

Commissions that are charged as a function of time - to the extent these are considered reasonable - are treated as adjustments to interest over the loan term or until regulation of interest occur. In the NNA, the **margin between the buying and selling rates** of foreign currency and securities offered by credit institutions when changing foreign currency and dealing in securities is regarded as a paid service, estimated from items of fees in the credit market statistics for banks. In the last ten years this

<i>Production sector</i>	<i>Reporting code</i>	<i>Item</i>	<i>NOK</i>
122000	1120000000	Credit provisions	5108
122000	1200101000	Guarantee provisions	4882
122000	1200102000		2171
122000	1200109000		1925
122000	1200200000		3899
122000	1200900000		13539
Total			31524

type of income has increased considerably, causing a balancing problem, as many of the customers apparently do not record these transactions as part of their operating costs, but directly as an offsetting (negative) item on their balance sheet.

Financial services directly charged in Norwegian banks. Million NOK. 2019.

3.17.25 **Output in financial intermediation, except insurance and pension funding, is specified by 14 characteristic and 2 non-characteristic NNA-products. These are illustrated by 2019 figures:**

Output in financial intermediation, except insurance and pension funding. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
641 100 Central banking services	5.1	Items from the accounts of Norges Bank
641 900 Other monetary intermediation services, direct charges	36.5	Items from the accounts the commercial banks and the savings banks
641 936 FISIM from banks to households and NPISHs	40.2	Estimated from banking statistics and credit market statistics (interests)
641 946 FISIM from banks to non-financial enterprises	42.6	Estimated from banking statistics and credit market statistics (interests)
641 956 FISIM from banks to central government institutions	0	Estimated from banking statistics and credit market statistics (interests)
641 966 FISIM from banks to local government institutions	0	Estimated from banking statistics and credit market statistics (interests)
642 020 Services from non-financial holding companies	0.2	Estimated from accounts of non-financial holding companies
643 000 Services from securities funds	3.1	Estimated from accounts of securities funds
649 200 Other credit granting services, direct charges	7.9	Items from the accounts of state banks, credit enterprises and financial companies
649 900 Other financial services except insurance and pension funds	2.6	Estimated from accounts of securities funds
649 936 FISIM from other credit institutions to households and NPISHs	26.8	Estimated from the accounts of state banks, credit enterprises and financial companies and credit market statistics (interests)
649 946 FISIM from other credit institutions to non-financial enterprises	3.0	Estimated from the accounts of state banks, credit enterprises and financial companies and credit market statistics (interests)
649 956 FISIM from other credit institutions to central government institutions	0.2	Estimated from the accounts of state banks, credit enterprises and financial companies and credit market statistics (interests)
649 966 FISIM from other credit institutions to local government institutions	2.4	Estimated from the accounts of state banks, credit enterprises and financial companies and credit market statistics (interests)
<i>Non-characteristic output</i>		
	1.7	Include rental services of non-residential property and renting of automobiles
Total output	172.3	

3.17.26 Insurance and pension fund outputs have **earlier been measured indirectly** as kind of margins (premiums less claims), in accordance with ESA95 principles. Output of life insurance services were earlier derived in the following way:

Life insurance output. Former method.

A: Actual premiums earned
B: Claims due
C: Net surplus on reinsurance
D: Premium supplements
E: Increases in technical provisions etc.
Increase in insurance technical reserves
-Revaluations (adjustments for capital gains/losses, both realized and non-realized)
+ Other technical provisions
+ Correction made by ratio of insurance liabilities to total liabilities
Output of life insurance services according to formula (A-B+C+D -E)

3.17.27 As from 2008 however, this **method of estimating life insurance output in the NNA has been changed**. The change in estimating output in life insurance in the NNA is a result of the **life insurance reform** in Norway in 2008, changing the reporting system for insurance companies to the authorities. It has however not been possible to change the estimation methods for the years prior to 2008. The most important aspects of the reform were:

- to separate more explicitly the resources belonging to the insurance companies from the resources belonging to its customers
- to make the dispersion of risk between the companies and its customers more clear-cut, and
- to present a more exact picture of the prices on insurances services products.

3.17.28 The reform and the change in reports have made it possible to estimate life insurance output, i.e., insurance services rendered to the customers, more directly if compared to earlier method (margin). This is achieved by extracting from the new report the following two elements of the premiums payable directly from individual customers. The sum of those two elements will represent the value of the life insurance service in all contracts:

Life insurance services. New method.

<i>Reporting code</i>	<i>Item</i>
111111	Compensation for administrative costs, management and interest guarantee
111112	Profit element to cover risk
SUM	Output of life insurance services

3.17.29 As it is only cost elements of direct premiums that are identified, **production of reinsurance** is not recorded as output.

3.17.30 The compilation of item **imputed interest accruing to life insurance policy holders (premium supplements)** was also changed. The **former method** was according to the following table:

Imputed interest accruing to life insurance policy holders. Former method.

Income from interest etc.
- Payments of interest etc.
+ Dividends
+ Real estate income
- Other financial expenses
= Imputed income accruing to life insurance policy holders before correction
- Correction made by the ratio of insurance liabilities to total liabilities
= Imputed income accruing to life insurance policy holders after correction

3.17.31 As seen above, the former method was to estimate total income and then derive the customers' share using the ratios from the balance sheet. In the new reporting system, however, the income attributed to the customers can be derived directly from the reports via sub-items in the profit and loss statements. **Each income item** in the report is given a code that stipulates whether the income is attributed to the company or its customers:

Imputed interest accruing to life insurance policy holders. New method.

<i>Reporting code</i>	<i>Item</i>
100+200	Income attributed to customers
300	Income attributed to the insurance company

3.17.32 The estimations of **output of pension funding services** have not changed (no change in reporting system), while the estimation of **output of non-life insurance services** has been adapted to the new ESA 2010 recommendations. Following the new international recommendations, **adjusted claims due** is used in the calculation of the current price figures.

3.17.33 According to the new recommendations in ESA 2010, the estimation of output in non-life insurance should include claims due **adjusted for change in equalisation changes in the equalisation reserves and own funds**. In the reports from the non-life insurance companies, five items are relevant for adjusting the claims due:

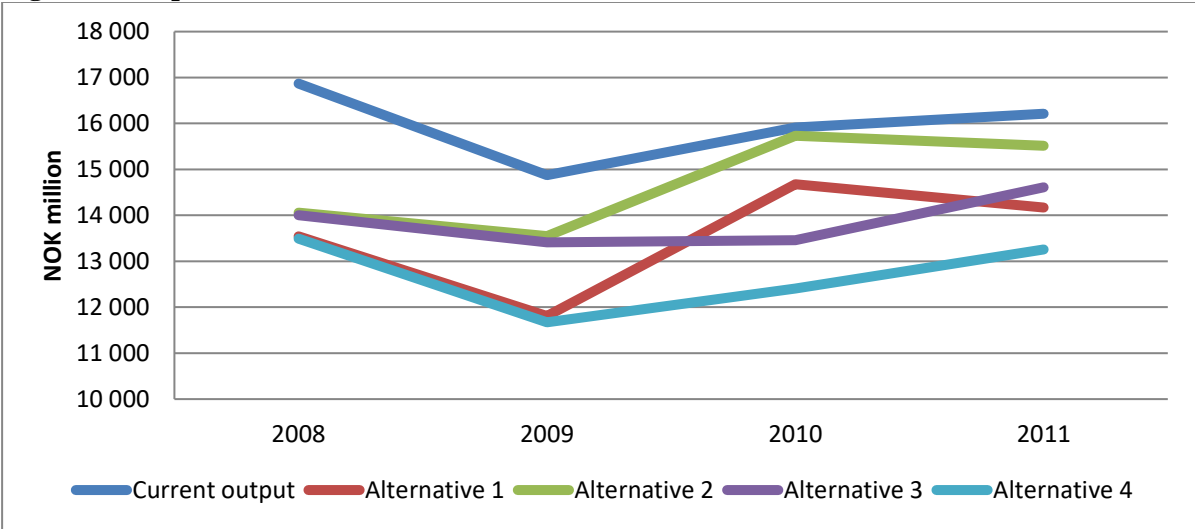
1. Change in provisions of unearned premiums
2. Change in provisions of unearned premiums, reinsurance
3. Change in provisions of claims outstanding
4. Change in provisions of claims outstanding, reinsurance
5. Change in equalization provision

3.17.34 According to ESA 2010, provisions of unearned premiums and provisions of "claims" should secure the insurance companies' ability to pay out accruing claims, while the equalization provisions should secure the insurance companies' own equity. Based on ESA/SNA's definition, it seems that the provisions of unearned premiums and claims need to be included in the adjusted claims calculation. Whether the change in equalization provisions should be included is somewhat less apparent.

3.17.35 In the process of testing new calculations of output, four combinations or alternative methods were conducted:

- Alternative 1 adds to the claims due changes in provisions of unearned premiums and claims, without a reinsurance part.
- Alternative 2 adds the equalization provisions.
- Alternative 3 adds the reinsurance part to the first method
- Alternative 4 adds the reinsurance part to the second method

Figure 1. Output in non-life insurance with alternative definitions. NOK millions.



3.17.36 Compared to the methods tested, it is only when changes in provisions of unearned premiums, provisions of claims outstanding and their reinsurance part is added that production is more stable than the current calculation method. Following this calculation, production is generally reduced from around NOK 16 000 million to NOK 14 000 million between 2008 and 2011. Figure 1 shows output calculated in different methods as described above. The dark blue line shows output the way it was calculated prior to the change of method. Alternative 3, represented by the purple line, gives the most stable value of output.

3.17.37 Given the results from the tested calculation methods, output is now calculated by alternative 3: adjusting claims with changes in provisions of unearned premiums and of claims outstanding, and also including their reinsurance part. As can be seen from the figure, alternative 3 is the formula resulting in the smoothest development.

Output of non-life insurance services. New method.

A: Actual premiums earned
B: Claims due, adjusted with changes in provisions of unearned premiums and of claims outstanding, including their reinsurance part.
C: Net surplus on reinsurance
D: Premium supplements
E: Increases in technical provisions etc.
Increase in insurance technical reserves
-Revaluations (adjustments for capital gains/losses, both realized and non-realized)
+ Other technical provisions
+ Correction made by ratio of insurance liabilities to total liabilities
Output of pension funding services and output in non-life insurance according to formula (A-B+C+D -E)

3.17.38 **Output in insurance and pension funding is specified** by 4 characteristic and 3 non-characteristic NNA-products. These are illustrated by 2019 figures:

Output in insurance and pension funding. NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
651 100 Life insurance services	8.1	Items from the accounts of life insurance companies
651 210 Other non-life insurance services	12.6	Items from the accounts of non-life insurance companies
651 220 Car insurance services	5.4	Items from the accounts of non-life insurance companies
653 000 Pension funding services	1.9	Items from the accounts of the pension schemes
<i>Non-characteristic output</i>		
	5.1	Includes rental services of non-residential property, other credit granting services, and other services auxiliary to financial intermediation
Total output	33.1	

3.17.39 In order to **allocate non-life insurance output**, information from both the insurance industry and the users is used. The reports from the insurance companies give data split on 29 various insurance segments of which 14 are related directly to households' final consumption expenditures. Using this information to estimate households' final consumption expenditures the remaining output is, together with imports of these services, to be allocated to other uses, i.e., intermediate consumption of industries and exports. Exports and imports are estimated using a percentage/general ratio of total output in non-life insurance divided by total premiums on the premiums paid to and received from the rest of the world as observed through the BoP reporting system (UT-statistics). Thus, the total for non-life insurance used as part of intermediate consumption expenditures is given. For each industry,

intermediate consumption of non-life insurance services is estimated using the above-mentioned percentage/general ratio on the figures on premiums paid reported by the individual industry in the SBS (item NO7500). Subsequently, total supply and total use of the non-life insurance services are balanced normally by adjusting the intermediate use of this service in some industries, through reallocation between products while the intermediate consumption in total for each industry is left unaffected.

3.17.40 Output in services auxiliary to financial intermediation is specified by 6 characteristic NNA-products and 2 non-characteristic products. These are illustrated by 2019 figures:

Output in services auxiliary to financial intermediation. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
661 100 Services auxiliary to financial intermediation	1.6	Items of accounting statistics
661 200 Fund management services	6.3	Items of new accounting statistics
661 900 Other services auxiliary to financial intermediation	5.3	Items of new accounting statistics
662 000 Services auxiliary to insurance and pension funding	5.6	Items of new accounting statistics
663 000 Other fund management services	10.3	Items of new accounting statistics
<i>Non-characteristic output</i>		
	0.3	Own account R&D and property rent
Total output	29.4	

Intermediate consumption

3.17.41 In the NNA, **intermediate consumption** in financial intermediation is estimated at NOK 81.8 billion in 2019. The number of products specified varies between 17 in Pension funding and 53 in Other financial intermediation.

3.17.42 Main sources used are the same as for output:

- Credit market statistics, accounting data organized in data base ORBOF for
- Credit market statistics, accounts of insurance companies in database FORT
- Credit market statistics, accounts of pension funds in database PORT
- Credit market statistics, accounts of other financial institutions
- Accounting statistics for auxiliary services to financial intermediation

3.17.43 For **financial intermediation**, except insurance and pension funding, intermediate consumption is estimated from the **accounting data of credit market statistics**. Certain deviations appear when comparing the NNA estimates and corresponding data of financial statistics. In the NNA, expenses of travel on business have been recorded 50 per cent as intermediate consumption and 50 per cent as compensation of employees. For credit enterprises and financing companies, this means that 5 per cent of item other operating costs are treated as compensation of employees, while exclusively treated as intermediate consumption in the financial statistics. More significantly, intermediate consumption in commercial and savings banks was adjusted downwards in the NNA, by excluding writing-off bad debts from current costs as intermediate consumption.

3.17.44 For **banks including the central bank** - and also for **credit enterprises and financial companies** - data are collected in a **very detailed** way. Commission and fees are explicitly shown, also including credit commissions that are treated as paid services. Data are not as detailed for non-financial enterprises as for financial enterprises and might create some asymmetrical treatment between the two sectors. For instance, margins on change of currency are most likely treated as current or other costs and not as interest payments in the accounts of non-financial enterprises.

3.17.45 For **insurance** and pension funding, intermediate consumption is estimated from the **accounting data of credit market statistics** and thereby treated in a quite detailed way in the national accounts. The form by which information on costs is collected is well designed by type of costs. Referring again to the treatment of expenses of travel on business, 2 per cent of item other operating costs is treated as compensation of employees in the NNA, while exclusively treated as intermediate consumption in the financial statistics of insurance companies. There are no adjustments made to compensate for the direct settlements of claims by insurance companies with repairers of damaged goods or assets.

3.17.46 For **activities auxiliary to financial intermediation**, intermediate consumption is based on the accounting statistics. Some conceptual adjustments are made to intermediate consumption to balance margins earned by brokers.

3.17.47 The following table is an excerpt from the Process table of NACE K, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in administrative records, combined data and models (FISIM).. The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions.

NACE K. Excerpt from Process Table. NOK million. 2019.										
Basis for NA Figures										
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrapolation + Models</i>		
<i>Output</i>	0	82461	29202	0	0	0	0	115168	0	226831
<i>IC</i>	0	0	81746	0	0	0	0	0	0	81746
Adjustments										
	<i>Data validation</i>	<i>Conceptual</i>		<i>Explicit Cut-off</i>		<i>Explicit exhaustive-ness</i>		<i>Balancing</i>	Final estimate	
<i>Output</i>	0	8258		0		0		0	235 089	
<i>IC</i>	0	16		0		0		0	81 762	

3.18 Real estate activities (L)

Contents

3.18.1 In the NNA, the activities of NACE L are **distinguished by 2 industries** within one A64 heading:

68 Real estate activities

680	Real estate activities	M	
688	Dwelling service production of households	M	O

3.18.2 Both industries are involved in market activities, while the **main activity of dwelling services is non-market production**, i.e., dwelling services for own use. All units registered in the business register are covered in the industry 680. Households that are not registered as legal units in the register are counted in the industry 688. These are mostly owner occupiers, but households can also let dwellings to other households as market activity. It is mandatory to register a legal unit if one lets five dwellings or more. For smaller units, registration is voluntary, but can give some tax advantages.

3.18.3 In Norwegian national accounts, households living in **housing cooperatives** are seen as owner occupiers. The main reason is that the households could, on their own initiative, sell or buy these dwellings at market prices. The assets, debts and incomes of the co-operative are distributed to the inhabitants for tax reasons every year. The occupants of the co-operative dwellings are seen as the economic owners of their dwelling. The dwellings of the housing cooperatives are included along with other dwellings of owner occupiers when imputed rents are calculated. Intermediate consumption is estimated on basis of intermediate consumption paid by owner occupiers excluding those living in housing cooperatives.

3.18.4 The legal units in NACE 68.201 (housing cooperatives) are not covered by the SBS. This decision was taken in order to save resources for the SBS. The arguments for including this industry in the SBS was weakened by the fact that their turnover is not considered relevant neither for paid rents nor for imputed rents. However, they have costs of administration and wages that should be part of NACE 68. The missing SBS has made it necessary to add these activities to the industry 680. Compensation of employees is estimated from the register data as wages relating to NACE 68.201. Other relevant costs are assessed from accounting data for house building cooperatives (payments from housing cooperatives for managing accounts and payments), and from a private consulting firm (Holteprosjekt) assessing normative costs for letting of dwellings (administration costs only are used). The present benchmark is from the 2002 revision but has later been adjusted by the results of the 2001 census.

3.18.5 Dwelling services for the industry 688 are estimated as annual projections to the latest benchmark year (2012). Below we describe first the methods involved in the annual projections, then the estimate for the benchmark year.

3.18.6 Real estate activities make a **contribution of 7.0 per cent to GDP in 2019**. Value added share of output is 64.4 per cent in 2019, above the national average.

NACE L - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE L VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
68	Real estate activities	388.1	138.0	250.1	100.0	7.9	7.0	6.8
NACE L		388.1	138.0	250.1	100.0	7.9	7.0	6.8

Output

3.18.7 **Main sources used** are:

- Statistics of rents of dwellings
- Annual accounting based SBS
- Housing statistics of various kinds

3.18.8 **Output of real estate activities, including dwelling services from industry 680** is estimated by a direct method using SBS-data. The part of the rental income coming from letting of dwellings is assessed from the composition of the capital stock (dwellings as a proportion of the total building stock). There is an addition for some services produced by housing cooperatives as explained above (3.18.4).

3.18.9 **Market dwelling services produced in industry 688** is estimated as an extrapolation of the benchmark figures for 2012, using the stock of fixed assets of dwelling services in constant prices and growth in the CPI for market rents. Dwelling capital is calculated by the PIM method, see chapter 4.12.

3.18.10 **Imputed services** from household owner-occupiers are projected by the growth in fixed assets of dwelling services in fixed prices as well. The increase in prices is taken from the CPI.

3.18.11 A small amount received by households as compensation for organizing kindergartens in private homes is deducted from imputed rents and added to production of market rents of industry 688.

3.18.12 Output in real estate services is specified by 7 characteristic NNA products. These are illustrated by 2019 figures:

Output in real estate services. NOK billion in 2019 - Sources and methods

<i>Characteristic output</i>		
681 000 Buying and selling own property	8.2	SBS-based data providing a basis.
682 010 Dwelling services, housing co-operatives	2.7	Calculations described above
682 020 Renting services involving own non-residential property	117.4	Calculations described above
682 090 Renting services involving own residential property (excluding owner-occupiers)	50,3	SBS-based data providing a basis.
683 100 Real estate brokerage services	11.8	SBS-based data providing a basis.
683 200 Real estate management services	11.3	Calculations described above (real estate agencies)
684 000 Dwelling services, for own final use, imputed	185.8	Calculations described above
<i>Non-characteristic output</i>		
	0.7	Mostly own-account capital formation
Total output	388.1	

3.18.13 Secondary or **holiday homes abroad** owned and occupied by residents of Norway are in the financial accounts recorded as a financial asset representing a claim on the rest of the world. This asset generates a property income for the Norwegian owner generated from the dwelling services produced by the dwelling, and on the other hand the owner when occupying the dwelling abroad is consuming dwelling services as part of the BoP item Travel expenditures. The figures for those income and imports flows are estimated using the assumption that the ratio for (net) operating surplus and household final consumption expenditures on dwelling services compared to the stock value of the holiday homes abroad, are the same as the corresponding ratio in the Norwegian dwelling industry. Stock data for the value of the dwellings abroad are calculated using information from various sources, a.o. brokers, tax data and 49 special surveys. The income flow to abroad and exports flows generated by the non-residents' ownership to holiday homes in Norway are estimated in a parallel way, based on stock values from the dwelling censuses.

The benchmark estimates of production of industry 688 for 2015

3.18.14 The main sources for the 2015 benchmark calculations were the 2011 Population and dwelling census and the 2015 Rental market survey. The census gives detailed information on the housing stock while the survey contains information on actual paid rents.

3.18.15 The rental market survey is an annual sample survey. The purpose of the survey is to measure rent levels in Norway grouped into different segments of the rental market. In 2015 the size of the net sample was 8014 dwellings. This covered approximately 1.5 per cent of the stock of rented dwellings. After making some adjustments to the dataset, the net sample was 6035 dwellings. The 2011 population and dwelling census includes every single dwelling in Norway, occupied as well as unoccupied. The population and housing censuses are conducted every tenth year.

3.18.16 A stratification of the housing stock is required to obtain a reliable estimate and to include relative price differences properly. The stratification is based on three characteristics of the dwelling: type of building (two types), geographical location (five categories) and number of rooms (five categories). The first building type consists of single-unit dwellings, row houses and other "individual

houses". The second building type consists of apartments in apartment buildings and blocks etc. In the classification of geographical location, the goal is to get an idea of centrality, with the assumption that the rentals are higher in large cities and other central areas than in more remote places. The classification consists of: Oslo and Bærum, other municipalities in Akershus, other large cities (Stavanger, Bergen, Trondheim and Tromsø), densely populated areas (at least 20 000 inhabitants), and other municipalities. The size category corresponds to the number of rooms, with the exception of the largest dwellings, which have five or more rooms. In addition to these strata for regular dwellings, holiday homes can be considered as a separate stratum. This is also the case for garages related to dwellings.

3.18.17 The output of dwelling services produced by rented dwellings were calculated by multiplying the average rental in each stratum from the Rental market survey with the number of dwellings in each stratum. By grossing up the rentals from the Rental market survey with all the rented dwellings the total output of actual rentals can be derived. These services are almost entirely consumed by households. Most of the production also happens within the household sector, but there is also some production in the non-financial sector and in the government sector. To find the output of dwelling services produced in the household sector, industry 23688, the output in other industries is deducted from the total estimated output.

3.18.18 To compute the output of dwelling services for owner-occupiers, a regression analysis is applied based on sample data from the Rental market survey and data from the 2011 census. In the regression the mean expected rental per square meter in each stratum is estimated, and these estimates are multiplied with the housing stock of the owner-occupied dwellings in the same stratum. The dependent variable in the regression analysis is rental per square meter per year. The explanatory variables are the size of the dwelling, measured by the logarithm of the number of square meters, dummy variables for number of rooms, geographical location and type of building, in addition to dummy variables for several other characteristics of the dwelling that might affect the rentals. There were also two dummy variables for large dwellings, one for dwellings larger than 180 square meters and one for dwellings larger than 210 square meters. These variables were included because many of the dwellings got a negative estimated rental if excluding these variables. After the inclusion of the dummies for large houses only about 1 per cent of the dwellings got negative rentals. When the average rentals were estimated, the negative values were excluded.

3.18.19 According to the Eurostat regulation for dwelling services, such regressions should show a correlation between observed and estimated rents of at least 0.7, corresponding to an r^2 of 0.49. The multiple regression gave a correlation coefficient of 84 per cent.

3.18.20 Rental by family and friends are excluded, since rentals at market value are the target. Adjustments were made in the regression analysis for rental by municipalities and employers. This is because owner-occupied dwellings are mostly privately owned, so only actual rentals from the private sector should be used for imputation purposes.

3.18.21 Some paid rents include electricity. According to Eurostat regulations, expenditures for electricity should if possible be adjusted for and excluded from paid rents. The rentals where electricity and heating were included were reduced by an estimated amount based mainly on the electricity-rental ratio in the household consumption in the national accounts.

3.18.22 Water supply and miscellaneous services relating to the dwelling is assumed to normally be included in the observed rentals. However, this should not be included in the imputed rentals for owner-occupiers. In the Eurostat regulation it is stated that 'charges for heating, water, electricity etc

should be excluded from the rentals'. These expenditures should be part of household consumption for the owner-occupiers and not as rentals, but in other COICOP items. Since we use observed rentals to compute rentals for owner-occupiers, these costs must be removed from the output. In 2015, the estimates were made based on data on costs related to sewage, water supply etc. from KOSTRA, Municipality-State-Reporting, and the housing stock. Other services related to the dwelling was estimated to be approximately 19 billion NOK, which were then removed from the output of dwelling services for owner-occupiers.

3.18.23 There were also adjustments made for furnished dwellings, and expenses such as cable TV/satellite, cleaning of stairs, shovelling of snow, etc.

3.18.24 To estimate garages, we first compared the average rentals with and without garages in every stratum. In some strata the rentals were higher where a garage was included than when it was not. In these instances, there must be other non-observable factors that influence the rentals, so we did not include these. In the other cases we used the difference in the rental value between the ones with garages included and not as an estimate of rental value per garage. The share of the housing stock having a garage or a parking place was found in the 2015 Survey on living conditions. Since it was not possible to remove the observations including garages from the Rental market survey data set (because it would have removed half of the observations), garages were already included in the computed output, and not added.

3.18.25 We only calculate output for holiday homes in the periods when they are occupied. To estimate the output of holiday homes the annual average rentals of similar facilities shall preferably be used. We therefore use adjusted prices per night for hotels and similar accommodations, for all the counties in 2015. The prices were scaled down to take into account that several things are included in the hotel prices besides rental of the room. We reduced the prices by nearly 40 per cent, to remove the part of the price covering electricity, heating, public fees, cleaning of the room etc. The stock of holiday homes is also available on county level. Data on the average number of nights spent in a cabin and the rented/owned cabin ratio is from the Institute of Transport Economics 2011. The output of holiday homes is then calculated by taking the number of holiday homes in each county multiplied by the adjusted hotel price in the same county times the average number of nights the holiday homes are occupied.

Intermediate consumption

3.18.26 In the NNA, **intermediate consumption in real estate, renting and business activities** is estimated at NOK 138 billion in 2019.

3.18.27 **Main sources used** are:

- For industry 680: Annual accounting statistics, SBS-based
- For industry 688: Benchmark assessment for 2012. The benchmark assessment is described separately below. There is separate compilation of intermediate consumption of FISIM based on financial statistics.

3.18.28 The main part of the **intermediate consumption in the production of dwelling services** consists of construction services and materials for maintenance. There is an important IC from FISIM,

and some building insurance services. Intermediate consumption for the services produced by non-financial corporations in NACE 680 is assumed to be included in their intermediate consumption in general. IC besides FISIM in NACE 688 is estimated as a projection of the benchmark figures for 2012, using fixed assets of dwelling services in constant prices and growth in rents according to the CPI. The benchmark calculations are described below.

3.18.29 The **FISIM services** included in intermediate consumption for industry 688 are FISIM from loans for dwellings purposes. It is assumed that 15% of the loans granted against security in dwellings are used for other (consumption) purposes.

Benchmark assessment of intermediate consumption for dwelling services, 2012

3.18.30 For the **2014 main revision**, a new benchmark was established for IC of dwelling services. This new assessment uses the **survey of the level of living** of 2012 as its main source. In addition, new information on IC for maintenance and repair of holiday houses was included. The data on IC for holiday houses was taken from a survey carried out by a research firm (TØI, Institute of Transport Economics). The benchmark assessment covers maintenance and repair only. Building insurance and FISIM estimates were taken from the regular annual compilations for the financial industries for 2012.

3.18.31 In the survey of level of living, they ask for expenditures during the past 12 months for maintenance, repairs or decoration/renovation, excluding expenditures for new construction or enlargements. If the household answer 'yes', they are then asked for their expenditures for materials, freight and services for the past 12 months. Even though the guidance given mentions types of expenditures that are typical maintenance, it seems likely that some expenditures that increase the standard of the dwelling or prolong its life are included, based on the observation that many of the amounts reported are very high, even close to the costs of a new dwelling. However, these should be regarded as expenditures for investment in the national accounts.

3.18.32 Elsewhere in the survey of level of living, they ask if the household has undertaken one or more of a specified set of projects related to the dwelling during the past 12 months. These projects are:

- Replacement of windows or entrance doors
- New kitchen outfit
- Installation of or rebuilding of bathroom/w.c.
- Replacement of the electric wiring
- Improvements of heating equipment
- New materials in walls, floors or ceilings indoors
- New outdoor paneling/ covering
- Insulation or re-insulation of outer walls, ceiling or floors

The expenditures for these projects were not, however, requested. We have, however, decided to regard these projects as projects of investment for the household. In order to split the investment costs from regular maintenance and repair, a regression analysis is undertaken for the total expenditures for maintenance repairs etc., by adding dummy variables for each of the above project defined as one if the household had done this kind of project, else zero. Extreme cases reporting expenses above 1 mill

NOK were deleted from the analysis. The constant term of this regression was taken to represent regular maintenance and repairs, including small maintenance and repairs of a kind that are done by renters as well as owner-occupiers.

3.18.33 Average expenditures for maintenance, repairs etc. for renters (excluding cooperatively owned dwellings) were taken as an estimate for small maintenance and repairs of a kind likely to be paid by renters as well as owners. The same amount was deducted from the maintenance expenditures of the owner-occupiers and thus reclassified from intermediate consumption to household final consumptions expenditures. The survey of the level of living explicitly asked renters not to include expenditures paid by or refunded by the landlord.

3.18.34 The survey of the level of living does not split maintenance expenditures between materials and services. The split was based on the household budget survey. We used the detailed product composition of materials for maintenance and repair from the benchmark year of 2003.

3.18.35 The average maintenance and repair costs per owner-occupied dwelling are grossed up by the total stock of owner-occupied dwellings. Also rented dwellings are supposed to have the same average total intermediate costs. The part that is considered as IC for market rentals in industry 688 corresponds to this industry's share of total output of market dwelling services.

3.18.36 Expenditures for maintenance and repair of holiday homes are taken from the survey done by TØI on the use of holiday homes in 2008. The owners are asked to state maintenance costs for materials, services and 'other expenditures'. As expenditures for investments are given separately, we have assumed that the costs reported are all for intermediate consumption. The average amount per holiday home is grossed up by the total stock of holiday homes from the GAB register.

3.18.37 The following table is an excerpt from the Process table of NACE L, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources (SBS) and extrapolations and models. The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, and minor adjustments through balancing.

NACE L. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
Benchmark extrapolations				CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrapolation + Models			
Output	0	0	175 403	220 653	0		-5907	214746	0	390 149
IC	0	0	73 332	39 095	0		-5 907	33188	0	106520
	Adjustments							Final estimate		
	Data validation	Conceptual		Explicit Cut-off	Explicit exhaustiveness	Balancing				
Output	0	-2090		0	-1	0	388 058			
IC	0	31 483		0	-32	-2	137969			

3.19 Professional, scientific and technical activities (M)

Contents

3.19.1 In the NNA, the activities of NACE M are **distinguished by 7 industries** within 5 A64 headings:

69-70	Business services		
690	Legal and accounting activities	M	
700	Activities of head offices and management consultancy activities	M	
71	Architecture and engineering activities; technical testing and analysis		
710	Architecture and engineering activities; technical testing and analysis	M	(N)
72	Scientific research and development		
720	Scientific research and development	M	(N)
73	Advertising and market research		
730	Advertising and market research	M	
74-75	Other professional scientific, technical and veterinary activities		
740	Other professional, scientific and technical activities	M	
750	Veterinary activities	M	

3.19.2 The activities of **research and development (R&D)** are specified in a separate industry. Research activities in manufacturing and other market activities - in a number of cases - are not possible to identify with separate units; only institutes identified as separate units in the Business Register are captured and included in NACE industry 720. Most R&D activities are regarded as market activities, involving substantial amounts of subsidies. The latter are treated as subsidies on products in the NNA. Some non-market activities are performed within central government, only here within the industry Other public administration. The same is true for some **geological and technical testing services**.

3.19.3 Professional, scientific and technical activities make a **contribution of 4.5 per cent to GDP in 2019**. Value added share of output is 55 per cent in 2019.

NACE M - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE M VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
69-70	Business services	77.2	23.1	54.1	33.6	1.9	1.5	1.5
71	Architectural and engineering consultancy activities	143.0	70.5	72.5	45.0	2.5	2.0	2.0
72	Scientific research and development	25.9	9.6	16.2	10.1	0.6	0.5	0.4
73	Advertising and market research	25.5	18.6	6.9	4.3	0.2	0.2	0.2
74-75	Other professional, scientific and technical activities	23.4	12.0	11.4	7.1	0.4	0.3	0.3
NACE M		295.0	133.9	161.1	100.0	5.6	4.5	4.4

Output

3.19.4 **Main sources used** are:

- Annual accounting based SBS
- Central government accounts
- R&D statistics

3.19.5 Definition of output based on the **Annual accounting based SBS** is provided in section 3.4 above. The SBS data are available also by **version of local KAUs**, in addition to the enterprise-based version.

Legal and accounting activities

3.19.6 In **legal and accounting activities** output is specified by 2 characteristic products which are referred to for 2019 below:

Output in legal and accounting activities. NOK billion in 2019 - Source and methods.

<i>Characteristic output</i>		
691 000 Legal services	19.3	SBS-based data providing a basis.
692 000 Accounting, book-keeping and auditing services	31.4	As above
<i>Non-characteristic output</i>		
	0.3	Own account investments, provisions, rental income
Total output	51.0	

Activities of head offices, management and consultancy activities

3.19.7 Output in **head office activities** is specified by 1 characteristic product, illustrated below by 2019 figures:

Output in other head office activities. NOK billion in 2019 - Source and methods.

<i>Market output</i>		
702 000 Business and management consultancy services	24.9	SBS-based data providing a basis.
<i>Non-characteristic output</i>		
	1.2	Own account investments, provisions, rental income, R&D
Total output	26.2	

Architecture, engineering and technical services

3.19.8 Output in **architecture, engineering, technical testing and analysis activities** is specified by 5 characteristic products. These are illustrated below by 2019 figures:

Output in architecture, engineering and technical services. NOK billion in 2019 - Source and methods.

<i>Market output</i>		
711 100 Architectural services	9.2	SBS-based data providing a basis.
711 210 Technical construction consultancy services	29.2	As above
711 230 Geological services	23.4	As above
711 290 Other engineering and technical consultancy services	56.1	As above
712 000 Technical testing and analysis services	18.5	As above
<i>Non-characteristic output</i>		
	6.5	Own account investments, provisions, rental income, R&D
Total output	143.0	

Research and development

3.19.9 In the Norwegian NA **research and development (R&D)** is calculated following the recommendations of ESA 2010 and 2008 SNA. Its main point is that R&D is to be treated as a type of capital. There are two main consequences. First expenditures on R&D are to be recorded as expenditures on capital formation and not as current costs (intermediate consumption). Secondly, own account R&D investments for own purposes are also included in the accounts.

3.19.10 The source used in the estimations of R&D is the R&D statistics and the SBS. The R&D statistics consists of three parts. Before 2022, the first two parts, i.e., statistics on the Research institutes and statistics on the Universities and Colleges, were both produced by Nordisk institutt for studier av innovasjon, forskning og utdanning (NIFU), see <http://www.nifu.no/en/>. The third part, statistics on R&D in businesses, was produced by Statistics Norway, see <http://www.ssb.no/en/teknologi-og-innovasjon/statistikker/foun>. **Starting from 2022**, the R&D statistics from all the three parts will be provided by Statistics Norway. The first and the third statistics are annual, while the second (universities and colleges) are bi-annual. Emphasis has been put on also measuring small units.

3.19.11 The R&D statistics mainly cover expenditures on R&D. The estimation of output of R&D is thus based on total expenditures on R&D (GERD concept of OECD's Frascati Manual) adjusted for the following items:

- Deduction for expenditures on buildings and equipment.
- Addition for consumption of fixed capital of capital employed in the production of R&D.
- In market production, a mark-up is added.
- Deduction for expenditures on software assumed being already included in the R&D expenditures.

- Deduction for any other subsidies on R&D.

3.19.12 Output of R&D for sale on the market is total output less own account investments in R&D. Output for sale in the market is estimated based on the information on financing in the R&D statistics, sales in general government accounts and exports of R&D. The two components of output, R&D for sale on the market and own account investments in R&D are estimated for all relevant industries, although more uncertain on the detailed industry level.

3.19.13 If R&D is organised as separate units, local KAUs is set up for these activities. This is not always the case, however, as some research work is undertaken by the head office. The magnitude of this has not been quantified, but there is a separate survey on R&D activity (Frascati manual data) being conducted by private firms outside the research institutes. This survey is conducted for corporations, but a breakdown by industry is asked for. Some units may be in the NACE 72. One cannot conclude that these units are missing. Indeed, they are all present in the business register. Some of the units may be misclassified by industry, but this is not generally believed to be the case. Most of the R&D work reported is for own use within the company. Specialised commercial research institutes are included in the Business register and covered by the SBS data. Information on the units is provided by the private firm responsible for the Norwegian R&D survey and from the unit within Statistics Norway that does the R&D survey for private firms except for the research institutes. The valuation of the R&D-work done on own account is at cost (sum of wage costs and IC). R&D within General government units is valued at production costs and the output is classified as own account investment work or production of services for sale. Some government owned institutes and non-profit institutions are classified as market units. Their production is valued in the SBS. R&D by specialised commercial research institutes is valued at revenues from sales, contracts, commissions, fees, etc.

3.19.14 In the R&D industry **output is specified** by 2 characteristic NNA-products. These are illustrated by 2019 figures (see also chapter 5.10.21 onwards):

Output in research and development. NOK billion in 2019 - Sources and methods.

<i>Market output</i>		
720 000 Research and development services	4.2	SBS-based data providing a basis. Special surveys on R&D
720 010 R&D advisory services	15.1	SBS-based data providing a basis.
<i>Non-characteristic output</i>		
	6.6	Includes own account investments, rental services, provisions and minor amounts of trade services (trade margins)
Total output	25.9	

Advertising and market research

3.19.15 In advertising and market research activities **output is specified** by 2 characteristic NNA-products. These are illustrated by 2019 figures:

Output in advertising and market research services. NOK billion in 2019 - Source and methods.

<i>Market output</i>		
731 000 Advertising services	23.3	SBS-based data providing a basis.
732 000 Market research and public opinion polling services	1.7	As above
<i>Non-characteristic output</i>		
	0.5	Own account investments, provisions, rental income
Total output	25.5	

Other professional activities

3.19.16 Output in **other professional, scientific and technical activities** is specified by 4 characteristic products, illustrated below in 2019 figures:

Output in other professional services. NOK billion in 2019 - Source and methods

<i>Market output</i>		
741 000 Specialized design services	8.1	SBS-based data providing a basis.
742 000 Photographic services	1.7	As above
743 000 Secretarial and translation services	1.0	As above
749 000 Other professional, scientific and technical services	8.3	As above
<i>Non-characteristic output</i>		
	1.0	Includes rental services, own account investments, trade margins and R&D
Total output	20.0	

Veterinary services

3.19.17 Output in **veterinary services** is specified by 6 characteristic products, illustrated below by 2019 figures:

Output in veterinary services. NOK billion in 2019 - Source and methods

<i>Market output</i>		
750 010 Veterinary services for pet animals	0.9	SBS-based data providing a basis.
750 090 Other veterinary services	2.4	As above
<i>Non-characteristic output</i>		
	0.8	Includes rental services, own account investments and trade provisions
Total output	3.5	

Intermediate consumption

3.19.18 In the NNA, intermediate consumption in NACE M **professional, scientific and technical activities** is estimated at NOK 122.6 billion in 2019. The number of NNA-products specified varies from about 50 to 70 in the various NNA-industries.

3.19.19 **Main source used** is:

- Annual accounting statistics, SBS-based

3.19.20 In all relevant industries intermediate consumption is estimated from the SBS-based data following procedures described by definitions given in section 3.4 above.

3.19.21 The following table is an excerpt from the Process table of NACE M, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources (SBS) and other estimations and models. The adjustments made to the source data are mostly of a conceptual nature to transform data in the sources into the national accounts definitions.

NACE M. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrapolation + Models</i>		
<i>Output</i>	0	0	282907	0	0	0	0	0	2018	284925
<i>IC</i>	0	0	140171	0	0	0	0	0	0	140171
	Adjustments						Final estimate			
	<i>Data validation</i>	<i>Conceptual</i>	<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>	<i>Balancing</i>					
<i>Output</i>	0	10110	0	-6	-3	295026				
<i>IC</i>	0	-6276	0	-18	23	133900				

3.20 Administrative and business support service activities (N)

Contents

3.20.1 In the NNA the activities of NACE N are **distinguished by 7 industries** within 4 A64 headings:

77	Rental and leasing activities	
770	Rental and leasing activities	M
78	Employment activities	
780	Employment activities	M
79	Travel agencies, tour operators and other reservation services and related activities	
791	Travel agencies, tourist offices and related activities	M
792	Tour operators and related activities	M
80-82	Other administrative and support service activities	
800	Security and investigation services	M
810	Services to buildings and landscape activities	M
820	Other business support service activities	M

3.20.2 All industries are **market activities**.

3.20.3 Administrative and support service activities account for **2.6 per cent of GDP in 2019**. Value added share of output is 51 per cent in 2019.

NACE N - NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE N VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
77	Rental and leasing activities	48.5	27.0	21.5	23.4	0.7	0.6	0.6
78	Employment activities	43.5	11.7	31.7	34.4	1.0	0.9	0.9
79	Travel agency and tour operator reservation service	20.2	16.9	3.3	3.6	0.1	0.1	0.1
80-82	Security and investigation activities	68.3	32.7	35.6	38.6	1.1	1.0	1.0
NACE N		180.5	88.4	92.1	100.0	2.9	2.6	2.5

Output

3.20.4 Main source used is:

- Annual accounting statistics, SBS-based

3.20.5 Definition of output based on the **Annual accounting based SBS** is provided in section 3.4 above. The SBS data are available also by **version of local KAUs**, in addition to the enterprise-based version.

Rental and leasing services

3.20.6 In rental and leasing service activities **output is specified** by 11 characteristic products, illustrated below by 2019 figures:

Output in rental and leasing services. NOK billion in 2019 - Source and methods

<i>Characteristic output</i>		
771 100 Renting services of automobiles	8.1	SBS-based data providing a basis.
771 200 Renting services of other land transport equipment	0.4	As above
772 000 Renting services of personal and household goods n.e.c	1.2	As above
773 100 Renting services concerning agricultural machinery and equipment without operators	0.1	As above
773 200 Renting services concerning construction and civil engineering machinery and equipment without operators	9.5	As above
773 300 Renting of office machines and computers	0.6	As above
773 400 Renting services of ships and boats	5.5	As above
773 500 Renting services of aircraft	4.3	As above
773 910 Renting services of other machinery and equipment n.e.c	6.7	As above
773 920 Renting services of oil rigs	6.7	As above
774 000 Renting services of licenses, patents and royalties etc.	4.1	As above
<i>Non-characteristic output</i>		
	1.4	Includes trade services (trade margins), own-account investments and provisions
Total output	48.5	

Employment activities

3.20.7 In employment activities output is specified by one characteristic product, illustrated by 2019 figures below:

Output in employment services activities. NOK billion in 2019 - Source and methods

<i>Characteristic output</i>		
780 000 Employment services	43.1	SBS-based data providing a basis.
<i>Non-characteristic output</i>		
	0.3	
Total output	43.5	

Travel agencies etc.

3.20.8 SBS-based statistics has been used as source since 2002. Travel agency services are estimated on net basis while the other characteristic product, Tour operator services, are recorded on a gross basis. For travel agencies it is assumed a 10 per cent margin for output, while the remaining 90 per cent considered costs. This was the result of an analyses of a supplementary survey to the SBS. The supplementary survey asked for the net margin figures. Several firms were asked about their data reporting and accounting practices. The conclusion of this special analysis was to use the coefficients mentioned.

3.20.9 Output in travel agencies and tour operators etc. is specified by 3 characteristic and 4 minor non-characteristic NNA-products. These are illustrated by 2012 figures:

Output in travel agencies and tour operators etc. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
791 100 Travel agency services	2.5	SBS-based data providing a basis.
791 200 Tour operator services	16.3	As above
799 000 Tourist office services etc.	1.3	As above
<i>Non-characteristic output</i>		
	0.1	Includes renting services and own account investments
Total output	20.2	

Security and investigation activities

3.20.10 In the NACE N industries security and investigation, **output** is specified by 2 characteristic products, illustrated below by 2019 figures:

Output in security and support services. NOK billion in 2019 - Sources and methods.

<i>Market output</i>		
801 100 Private security and investigation services	4.9	SBS-based data providing a basis.
802 300 Services incidental to security and investigation	4.9	As above
<i>Non-characteristic output</i>		
	0.2	Includes rental services, trade commissions and own account investments
Total output	9.9	

Services to buildings and landscape activities

3.20.11 In the NACE N industries services to buildings and landscape activities, **output** is specified by 2 characteristic products, illustrated below by 2019 figures:

Output in security and support services. NOK billion in 2019 - Sources and methods.

<i>Market output</i>		
811 000 Combined facilities support services	12.0	SBS-based data providing a basis.
812 000 Cleaning services	16.9	As above
<i>Non-characteristic output</i>		
	0.3	Includes rental services, trade commissions and own account investments
Total output	29.1	

Office administrative, office support and other business support activities

3.20.12 In the NACE N industries office administration, support and other support services activities, **output** is specified by 8 characteristic products, illustrated below by 2019 figures:

Output in security and support services. NOK billion in 2019 - Sources and methods.

<i>Market output</i>		
821 000 Office support services and convention organisation services	8.0	SBS-based data providing a basis.
829 100 Debt collection and credit information services	5.3	As above
829 200 Packaging services	0.7	As above
829 900 Other business support services	13.8	As above
<i>Non-characteristic output</i>		
	1.5	Includes rental services, trade commissions and own account investments
Total output	29.3	

Intermediate consumption

3.20.13 In NNA, **intermediate consumption in administrative and business support services activities** is estimated at NOK 88.4 billion in 2019. Number of NNA-products specified varies from about 30 to 60 in the various NNA-industries.

3.20.14 In activities of **NACE N SBS-based data** - treated as described in section 3.4 to define intermediate consumption - was introduced **in the 2002 revision**. The estimation of intermediate consumption follows gross and net treatment for tour operators and travel agencies, respectively, as for output.

3.20.15 **Main source used** is:

- Annual accounting based SBS

3.20.16 As a result of the introduction of **IFRS 16** in 2019, a correction was made to intermediate consumption in industry 770 amounting to +1500 million NOK.

3.20.17 The following table is an excerpt from the Process table of NACE N, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have mostly basis in annual combined data sources (SBS). The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, e.g. net recording of Travel agencies, and minor adjustments through balancing.

NACE N. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrap +Models</i>		
<i>Output</i>	0	0	204041	0	0	0	0	0	0	204041
<i>IC</i>	0	0	112315	0	0	0	0	0	0	112315
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>	<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>	<i>Balancing</i>					
<i>Output</i>	-2500	-21039	0	3	-6	180499				
<i>IC</i>	-1900	-23600	0	21	1516	88352				

3.21 Public administration and defence; compulsory social security (O)

Contents

3.21.1 In the NNA, the activities of NACE O are **distinguished by 3 industries** within the A64 heading:

84	Public administration and defence services; compulsory social security services	
841	Public administration and compulsory social security activities	N
842	Defence activities	N
843	Other public administration	N

3.21.2 In Norway, **social security activities** are integrated with **public administration** despite the existence of a national social security fund. In the NNA therefore, public administration (central) and compulsory social security activities are kept together, in terms of activities as well as institutional sector breakdown. Defence activities are distinguished, however.

3.21.3 Public administration and defence make a contribution of **6.1 per cent to GDP** in 2019. Value added share of output is 58.3 per cent, somewhat above the national value added share, but at the low end among the services activities.

NACE O - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE O VA	Total VA	GDP	GNI
84	Public administration and defence	372.9	155.6	217.4	100.0	6.9	6.1	5.9
	NACE O	372.9	155.6	217.4	100.0	6.9	6.1	5.9

Output

3.21.4 **Main sources used** are:

- Central government accounts
- Local government accounts

3.21.5 The following table shows the estimation of output from adding costs for 2019 in Central and Local government (and NPISHs). Non-market output is estimated by subtracting direct payments for services rendered by government units from total output (Please note that the total output in the sectors is shown, not only the output in industry O).

Estimation of total output. NOK billion. 2019.

<i>Central government</i>	
Intermediate consumption	138
Operating surplus	0.0
Compensation of employees	232.8
Net Other taxes and subsidies	0.0
Consumption of fixed capital	77.1
Output	447.9
<i>Local government</i>	
Intermediate consumption	134.5
Operating surplus	0.0
Compensation of employees	312.4
Net Other taxes and subsidies	0.0
Consumption of fixed capital	52.8
Output	499.8
<i>NPISHs</i>	
Intermediate consumption	40.6
Operating surplus	0.0
Compensation of employees	47.5
Net Other taxes and subsidies	0.0
Consumption of fixed capital	6.2
Output	94.4

Central government

3.21.6 Central government accounts and local government accounts are both principal sources of the statistical system. The items of the government accounts are tabled with a **whole set of information**. By use of detailed decoding plans, the required information is transformed into the structure used in both the SUT and the institutional sector accounts systems. In **central government accounts**, the information is organized in **chapters, items and sub-items**. The chapters 1 - 2999 concern expenditures, while the chapters 3000 - 5999 state income. Each chapter reflects one **function**. The items reflect various types of expenditures or income. Here is an example:

Central government accounts.

<i>Item (cost/debit)</i>	<i>Item (income/credit)</i>
01 Operating costs (Goods and services, and wages and salaries)	01-29 Sales of goods and services (fees)
.	30-39 Sales of fixed capital
.	.
.	.
45 Investments in fixed capital	70-89 Transfers from others than central and local government units
.	90-99 Payments on loans
.	
70-89 Transfers (to others than central and local government units)	
.	
.	
90-99 Loans	

3.21.7 The sub-items give a more detailed description of the types of cost or income. For example:

Central government accounts.

<i>Cost item 01</i>	<i>Operating costs (goods and services)</i>
Sub-item 21	Machinery, furniture, equipment
22	Consumer goods
23	Travel expenses
24	Office services
27	Operational costs machinery/transport equipment
28	Maintenance buildings and constructions
29	Operational costs buildings, rent

3.21.8 Information from the **local government accounts** is reported through the **KOSTRA** system (see later this chapter and chapter 10). Here the information is organized in **functions and types**. For example:

Local government accounts.

<i>Function</i>	<i>Type</i>
1201 Pre-school/kindergartens	Wages and salaries
1202 Elementary schools	Energy use
.	Insurance costs
.	
.	
1333 Roads new buildings and maintenance	
1334 Road safety	
.	
.	
.	
1730 Transportation scheduled bus	
1731 Transportation ferries	

3.21.9 The information in the central and local government accounts described above is transformed into the data structure of the NNA, the so-called FIIN structure, to serve both the SUT and the institutional sector accounts. The **item identifications** in terms of chapters and corresponding items and sub-items or functions and types are the ones given in the government accounts themselves. Each of these most detailed specifications is given a set of connected information, i.e., the nature of the flows in **types of account**, the **purpose or function** of the flows in COFOG groups, and the **product specification** of the flows in the NNA-products. In addition, there are **activity and sector identifications**:

National accounts - FIIN-structure.

<i>Type</i>	<i>Product</i>	<i>COFOG</i>	<i>NACE</i>	<i>Sector</i>	<i>Sector</i>	<i>Amount</i>
Type of NNA transaction, for example production, intermediate consumption, compensation of employees, income, transfers etc.	Detailed NNA product for use in SUT (when relevant, i.e., production, intermediate consumption)	Classification of function	Classification of industry	Reporting sector (government)	Partner sector (when known)	NOK

3.21.10 As an illustration of the **transformation of the information** available in **central government accounts**, let us look at the very first flow of the central government accounts Appanage for His Majesty the King:

Example: First item of the central government accounts.

<i>Accounts</i>	<i>Nature of information and contents</i>	<i>Codes</i>
Central government accounts	Item identification Chapter: His Majesty the King/Queen Item: Appanage sub-item	0001 01 19
	Type identification Compensation of employees in central government, organized posts	30101
	Product identification (NNA-product): General public services of central authorities, central government consumption	841 002
National accounts (FIIN- structure)	Activity identification (NNA-industry): Public administration and compulsory social security activities	841
	Purpose or functional identification (COFOG): General public services of executive and legislative organs, financial and fiscal affairs, external affairs other than foreign aid	0111
	Sector identification (NNA institutional sector): Central government appropriations	1311100

3.21.11 Annual central government accounts are utilized for the estimation of output in the public administration and defence industries. For each item area, outlays and incomes are recorded in the main source. Output is calculated as the value of total costs, including consumption of fixed capital. In the presentation below, an output area is defined as the total of two outputs (government consumption and fees). In annual national accounts, government source data are not adjusted, apart from tax data that are recorded in cash values like in government accounts until this day.

3.21.12 In allocating the flows of outlays and incomes of central government accounts to the NNA-products, the text attached to the central government accounts was considered useful in a number of instances, while the main guidance for the allocation work was **explanations to the CPA**. The CPA description for this area was quite helpful when establishing some rules of guidance for this work. Problematic cases had to be solved by taking into account these rules or other kinds of convention. The COFOG classification work was undertaken independently of the product classification work.

3.21.13 Output in public administration and social security for central government - in the sense described above - **is specified** by in all 15 NNA-products, of which 2 are for technical purposes only, and 5 are of a non-characteristic nature. The products are illustrated by 2019 figures:

Output in public administration and social security for central government. NOK billion in 2019 - Sources and methods.

<i>Non-market output of central government</i>		
841 002/003 Administration services of the State and the economic and social policy of the community	89.9	Detailed items of main source: items concerning fees paid for government services; items from central government fiscal accounts, items from other central government accounts, less minor adjustments related to sickness benefits (for all products)
842 102/103 Administrative foreign affairs related services	4.4	Detailed items from fiscal accounts
842 302/303 Law courts and prison related administrative services	8.6	Detailed items from fiscal accounts
842 402/403 Police services	21.9	Detailed items from fiscal accounts
<i>Non-characteristic output</i>		
	1.3	Includes own account investment work and R&D, renting services and some minor items of health services
<i>Technical products</i>		
	23.5	2 products for balancing of FISIM and government consumption of fixed capital

3.21.14 To arrive at total output on the industry level, the intermediate consumption of FISIM is added.

3.21.15 **Collective services** in government are given some product details in the NNA. Also, technical considerations play a role (specific codes for capital consumption and FISIM), and the split between the service as such and fees attached is motivated from possible separate component deflation procedure. Furthermore, it is considered an advantage to classify production to COFOG through production and consumption as far as the basic government accounts allow.

3.21.16 Illustration by 2019 figures follows by products for **defence activities** as well. **Output is specified** by 2 characteristic and 2 non-characteristic NNA-products, plus one technical product.

Output in defence activities. NOK billion in 2019- Sources and methods

<i>Non-market output of central government</i>		
842 202/203 Military defence services	35.2	Detailed items from central government fiscal accounts, including government fees items; items from other government accounts, some adjustment to government fees
<i>Non-characteristic output</i>		
	0.5	Own account investment work
<i>Technical product</i>		
	15.2	For balancing of government consumption of fixed capital
Total output	50.9	

3.21.17 Other public services activities include the Norwegian Railway Administration, the Norwegian Coastal Administration, the Norwegian Geological Survey and several research institutes.

3.21.18 Output in other public services activities is specified by 11 “semi-characteristic” products, i.e., they may be seen as characteristic of other industries. The products are illustrated in the following table by 2019 figures.

Output in other public services activities. NOK billion in 2019- Sources and methods.

<i>Non-market output of central government</i>		
491 002/003 Railway line services	8.7	Detailed items from central government fiscal accounts and from other government accounts
520 002/003 Central government transport support services	2.6	As above
682 032/033 Real estate renting services of central government	2.3	As above
710 002/003 Geological and similar services	0.2	As above
712 002/003 Technical testing and analysis services	0.2	As above
720 002/003 Research and development services of central government	0.8	As above
841 002/003 Administration	3.1	As above
<i>Non-characteristic output</i>		
	3.4	Own account investment work and R&D
<i>Technical product</i>		
	11.1	For balancing of government consumption of fixed capital
Total output	32.5	

Local government

3.21.19 **Annual local government accounts** reported through KOSTRA are utilized for the estimation of output of public administration in local government. Again, output is calculated as the value of total costs. Government accounting data was earlier less detailed in local government than in central government, but with the introduction of KOSTRA the opposite became true. The presentation that follows is a parallel to the one given above for central government.

3.21.20 **Output in public administration for local government is specified** by 2 characteristics and 4 “semi-characteristics” NNA-products (presented as pairs of government consumption and fees). The 3 non-characteristic products and 2 technical products constitute additional value to the output. These products are illustrated below by 2019 figures.

Output in public administration for local government. NOK billion in 2019 - Sources and methods.

<i>Non-market output of local government</i>		
493124/125 Public transportation services	26	Detailed items of main source, i.e. local governments accounts
520004/005 Services in connection with transportation	0	As above
841 004/005 General administrative services	69.4	As above
842 504/505 Fire brigade services	5.5	As above
931 004/005 Sports related services	3.7	As above
<i>Non-characteristic output</i>		
	9.4	Includes rental services of residential property and own account investment work
<i>Technical products</i>	26.1	2 products for balancing of FISIM and government consumption of fixed capital
Total output	140.1	

Intermediate consumption

3.21.21 In the NNA, **intermediate consumption** in public administration and defence is estimated at NOK 155.6 billion in 2019. Number of NNA-products varies between less than 30 in NACE 844 and as many as 150 in NACE 842.

3.21.22 **Main sources used** are:

- Central government accounts
- Local government accounts
- Annual cost survey data for defence activities
- Ad hoc cost survey data for education and health activities in local government

3.21.23 As stated above, the **items of government accounts are tabled with a whole set of information**. The 'type' component (types according to the FIIN-system) is the key for identifying flows that are destined for treatment as intermediate consumption. **Annual central government accounts and local government accounts** are utilized to the extent possible to estimate intermediate consumption of the public administration and defence industry. A problem, however, has been that government accounts do not provide enough detailed information by products on intermediate consumption. Information available in central government is confined to total purchases of goods and services for each item identified (if appropriate). Thus, the detailed information by items in the central government accounts cannot be utilized in the same way for compiling intermediate consumption as for output. The new source of **KOSTRA** has significantly improved the situation for local government accounts.

3.21.24 **KOSTRA** is an abbreviation for KOmmune-STat-RApportering ("Municipality-State-Reporting") and has been a large project that started as early as 1995. It was afterwards enlarged in scope to have its first full-scale reporting in March 2002 when entering its operational phase. KOSTRA focuses on two purposes: better information about the municipalities and more efficient reporting (electronic, use of electronic forms or file extracts, same source serving multiple-purpose situations). See also chapter 10.

3.21.25 Even though the KOSTRA reporting supplies many details on the cost structure in local government, the information given still has to be broken down on more detailed NNA products for intermediate consumption. This breakdown was initially achieved through assessing the new information in light of the information from the previously used **cost survey data**. And eventually, the distribution can be altered from the balancing of supply and uses of the NNA-products.

3.21.26 For its distribution on detailed NNA-products, the structure from a previously performed **annual cost survey data on defence activities** is used for the NNA-industry 842 Defence activities. On the question of the treatment of “military equipment” and the allocation of the value of military equipment between intermediate consumption and GFCF of the public administration industry, the rules according to ESA 2010 are followed, with all weapons and weapon systems generally classified as government GFCF.

3.21.27 The **distribution by the NNA-products** for intermediate consumption just described has been introduced as a basis for the estimation of intermediate consumption for all important **non-market activities of central and local government** - and even in a few cases of market activities.

3.21.28 The following table is an excerpt from the Process table of NACE O, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual administrative data (government accounts). The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions.

NACE O. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrapolation +Models</i>		
<i>Output</i>	0		369293	0	0	0	0	0	0	369293
<i>IC</i>	0		145915	0	0	0	0	0	0	145 915
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>		<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>		<i>Balancing</i>			
<i>Output</i>	0	3644		0	0		0	372937		
<i>IC</i>	0	9 662		0	0		0	155 577		

3.22 Education (P)

Contents

3.22.1 In the NNA, the activities of NACE P are **included in one industry** within the A64 heading:

85	Education services		
850	Education	M	N

3.22.2 **Four different types of producers** are involved as units of production of the education industry in the NNA, i.e., **three types of non-market producers** and one type of **market producers**.

-	Non-market producers of local government
-	Non-market producers of central government
-	Non-market producers of NPISH
-	Market producers

These distinctions have been made according to ESA 2010 principles. In Norway, most institutions providing education (and health and social work) services will receive public grants that exceed the 50 per cent of cost, e.g., for private schools, they are amounting to 85 per cent of average costs per student, subject to type of school. While often the 50 per cent finance criterion is met, the critical question is whether the control criterion is met as well. The latter seems not being met in a number of cases; thus such institutions are grouped as non-market producers of NPISH in the NNA, rather than as non-market producers of local or central government.

3.22.3 Education makes a **contribution of 4.9 per cent to GDP in 2019**. The contribution from non-market education in 2019 is 4.6 per cent, leaving 0.3 per cent contribution to GDP from market education. Value added share of output is 82 per cent, one of the highest ratios among the services industries.

NACE P - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE A VA	Total VA	GDP	GNI
85	Education	212.5	39.3	173.2	100.0	5.5	4.9	4.7
NACE P		212.5	39.3	173.2	100.0	5.5	4.9	4.7

Non-market education

Output

3.22.4 Main sources used are:

- Central government accounts
- Local government accounts
- Accounting statistics for educational institutions within NPISHs

3.22.5 The **annual central government accounts** and **local government accounts** are used to estimate main parts of the output in the education industry. These sources are directly used for non-market output of central and local government but have also been used for the estimation of non-market output of the NPISHs by utilizing information (values and rules) on payments of grants from central and local government to these institutions.

3.22.6 Output of education services in **NPISHs** is estimated based on accounting statistics and cost survey. Not all units are covered and numbers of pupils per school is used to gross up the accounting figures. Output is estimated as sum of costs, i.e., compensation of employees and estimated intermediate consumption from the accounting statistics, adding estimated consumption of fixed capital and FISIM.

3.22.7 **Output of non-market education is specified** by 6 characteristic products (further differentiated as seen below). These are illustrated by 2019 figures:

Output in non-market education. NOK billion in 2019 - Sources and methods.

<i>Non-market output of local government</i>		
852 004/005 Primary education services	73.2	Detailed items of main source, i.e., local government accounts
853 004/005 Secondary education services	29	As above
854 104/105 Vocational training	0.7	As above
855 904/905 Adult education services	8.6	As above
<i>Non-characteristics output, local government</i>		
	0.3	Includes a small amount of renting services of residential property and own account investment work
<i>Technical products</i>		
	12	For balancing of government consumption of fixed capital
<i>Non-market output of central government</i>		
720 003 Research and development services of central government	0.5	Specific items - central government fiscal accounts
852 002/003 Primary education services	0.4	Detailed items of main source, including government fees items, all from fiscal accounts
853 002/003 Secondary education services	0.6	As above
854 202/203 Higher education services	24.1	As above

<i>Non-characteristics output, central government</i>		
	20.4	Includes own account investment work and R&D
<i>Technical products</i>		
	19.8	For balancing of government consumption of fixed capital
<i>Non-market output of NPISH</i>		
851 000 Primary education services	4.2	Cost data from accounting-based statistics on schools in primary education (NPISHs)
853 000 Secondary education services	3.9	Cost data from accounting-based statistics on private schools in secondary education (NPISHs)
854200 Higher education services	1.4	Cost data from accounting based statistics on private schools in higher education (NPISHs)
855 900 Other education	0.7	Cost data from accounting-based statistics on private schools in other education (NPISHs)
<i>Non-characteristics output, NPISH</i>		
	0.4	Own account R&D
Total output	200.4	

3.22.8 Consumption of fixed capital is not specified as a separate technical product in the case of NPISH as is done in general government, but capital consumption is nevertheless estimated for NPISHs.

Intermediate consumption

3.22.9 In the NNA, **intermediate consumption** in non-market education is estimated at NOK 36.3 billion in 2019. Number of NNA-products varies between the sub-categories, from more than 60 in central government to 18 in NPISH.

3.22.10 **Main sources used** are:

- Central government accounts
- Local government accounts
- Ad hoc cost survey data for education in local government
- Accounting statistics for education units within NPISHs

3.22.11 The **annual central government accounts** and **local government accounts** are used to determine total intermediate consumption in these areas, while the ad hoc cost survey data for education in local government are utilized for its composition by products. In general, the method of estimation followed is described in the intermediate consumption section of public administration. In **NPISHs** from 2005, a new accounting-based statistics is the source for estimating intermediate consumption.

Market education

Output

3.22.12 **In market education**, sources and methods of estimations largely follow what is described below. These methods and results will be revised when we get annual accounts data (from Structural business statistics) for P (education), Q (human health and social work activities), and R (arts, entertainment and recreation) from 2022.

3.22.13 **Sources used** are **ad hoc price surveys**, underlying price data from the Consumer Price Index (covering at least five items); statistics on the **number of students** (for several categories of students); **number of drivers' licenses**; information from Driving Teachers' Association, and information on rules for **government grants**. Data from household sample surveys are also utilized, primarily for comparison purposes.

3.22.14 For **private high schools and universities**, fees paid are well above 50 per cent of the costs and should therefore contribute to market production. The source and method used are similar to those used for non-market production by the NPISHs, i.e., based on a new accounting statistics for educational institutions outside general government.

3.22.15 For **driving schools**, the Driving Teachers' Association was contacted for an output estimate and average costs for driving lessons per student. A benchmark output for 1990 was based on an average cost of 11 000 NOK per student and the number of drivers' licenses issued. For other years, the licenses issued in the year were used as a volume indicator, while the CPI for education services was used as a price indicator. A comparison for 1990 between output estimate made and expenditures for driving schools according to the household sample survey did not deviate much (0.9 and 0.8 billion NOK, respectively), when taking into account driving school services for business and schools as well.

3.22.16 Most important among the **activities of adult and other education** are the activities of adult education associations. One of the main units in the field (AOF) - has provided price information on courses held. Fees paid were estimated by multiplying the number of participants by adjusted average price per participant, adjustment taken with a view to the level of government grants for these activities, which were added to arrive at output. **Government grants for education** are usually stipulated at normal rates per student. They were therefore treated as subsidies on products, affecting the estimation of output. An exception was payments as subsidies out of governmental funds (other central government accounts) that were treated as other subsidies on production. No adjustment is being made for informal education activities, such as private music or language teachers. Public schools are widespread (also music schools) in Norway; thus, private music and language teachers are believed to be less significant. The data for local government give some rough indications as to types of expenditures, though. Private teachers are not common in Norway. There may be uncovered activities of music teaching, conductors for bands and choirs etc. Most likely these activities will be classified in NACE 90. Music lessons are offered through municipal music schools (and then included in education) and through organised activities as leisure activities.

3.22.17 **Output in market education is specified** by 4 characteristic NNA-products. These are illustrated by 2019 figures:

Output in market education. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
853 000 Secondary education services	0.5	Item grant to secondary schools
854 200 Higher education services	2.8	Item grant to private high schools and universities from central government accounts, plus fees paid
855 300 Driving school services	5.4	1990 estimate based on education costs per student and number of students, price and volume indicators used for other years
855 900 Other education services	2.9	Item grant to adult services and to folk high-schools from central government accounts and from local government, plus fees paid
<i>Non-characteristic output</i>		
	0.3	Own account R&D
Total output	11.9	

Intermediate consumption

3.22.18 In the NNA, **intermediate consumption** in market education is estimated at NOK 3 billion in 2019. Number of NNA-products as inputs is around 25.

3.22.19 **Main source used** is one also listed for non-market education:

- Accounting statistics education units within NPISHs

3.22.20 For **private schools** including NPISH units, intermediate consumption has been based on information from the new accounting statistics. Some market education, such as driving schools, are not covered by the cost survey, their IC is updated from the expert assessment in the 1995 main revision, in proportion to output. Product composition of IC has generally not been revised since the ad hoc surveys mentioned, apart from the yearly reconciliation of supply and demand of the relevant cost elements.

3.22.21 The following table is an excerpt from the Process table of NACE P, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources. The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions

NACE P. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
				Benchmark extra-polarations	CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrapolation +Models		
Output	0	0	191647	0	0	0	0	0	0	191647
IC	0	0	39 062	0	0	0	0	0	0	39 062
	Adjustments							Final estimate		
	Data validation	Conceptual		Explicit Cut-off	Explicit exhaustiveness	Balancing				
Output	0	20830		0	0	0	212477			
IC	0	221		0	0	0	39 283			

3.23 Health and social work (Q)

Contents

3.23.1 In the NNA, the activities of NACE Q are **distinguished by 4 industries** within the A64 heading:

86-88 Health and social work services

860	Human health activities	M	N
870	Residential care activities	M	N
882	Child day-care activities	M	N
889	Social work activities by disabled workers	M	

3.23.2 The first three NNA industries record both **market** and **non-market activities**, while the remaining one is a rather special construct, in which **social work activities by disabled workers** have been recorded with output mostly consisting of a long list of manufacturing products.

3.23.3 Like for education, four different **types of producers** are involved as units of production of the health and social work industry, i.e., **three types of non-market producers** and one type of **market producers**. Non-market output is valued at total costs minus sales. Most important are non-market producers of **local government** with an output share of just above 40 per cent of these activities, while non-market producers of central government are almost as important with about one third output share after taking over the responsibility of hospitals. These distinctions have been made according to ESA 2010 principles. In Norway, most institutions providing health and social work services will receive public grants that exceed the 50 per cent cost. The allocation to sectors is more unclear here than for schools when it comes to the control criterion, and this issue is therefore put on the research agenda.

3.23.4 Health and social work makes a **contribution of 9.2 per cent to GDP in 2019**. The contribution from non-market health and social work in 2019 is 7.6 per cent, leaving 1.6 per cent contribution to GDP from market health and social work. Value added share of output is 77 per cent in 2019, about the same as in education.

NACE Q - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE A VA	Total VA	GDP	GNI
86	Human health activities	220.9	60.4	160.5	44.6	5.1	4.5	4.4
87-88	Social work activities	241.3	41.6	199.7	55.4	6.3	5.6	5.4
NACE Q		462.2	102.0	360.2	100.0	11.4	10.1	9.8

Non-market health and social work

Output

3.23.5 **Main sources used** are:

- Central government accounts (including National Insurance)
- Local government accounts
- Annual detailed accounting statistics of health institutions
- Annual social statistics

3.23.6 **Central and local government accounts** are described elsewhere and in the public administration chapter. In this context, it is important to note that relevant items of National Insurance are incorporated in central government accounts. The **annual statistics of health institutions** contain inter alia data on expenditures of health institutions that are covered by the national health plans. The **annual social statistics** contain various kinds of information related to social work and nursing activities.

3.23.7 **Annual central government accounts and local government accounts** are used to estimate main parts of the output in the health and social work industry. These sources are directly used for non-market output of central and local government but are also used as supplementary sources for the estimation of non-market output of the NPISHs by utilizing information on payments of grants from central and local government to these institutions.

3.23.8 **Output of hospital services** is produced in three types of units, of which non-market production of central government is the most important. In the 2002 main revision, new estimations had to take into account **institutional changes** made from 1st January 2002 (Hospital Reform Act), i.e., central government was given the responsibility for specialized health services. Five regional health enterprises were created - taking responsibilities over from local government - and these enterprises also made agreements with individual hospitals and institutions owned by foundations as well as local government institutions. For the NPISH units, **new accounting statistics** were made

available for institutions related to treatment of patients within somatic hospitals and psychiatry (close to 50 institutions).

3.23.9 More than 85 per cent of **residential care services** are non-market output of central and local government that are **covered by the central and local government accounts**. In **child day-care services**, the market versus non-market distinction criteria comes into play. Day care services are supplied by Local Government institutions (kindergartens and organised care for school children) and by market producers (private kindergarten, day care outside institutions). For Local government activities, production is valued as sum of costs (wage costs, IC and CFC). Payments from the parents are treated as fees (market output). Private producers of day care are classified as market producers. The payments that Government makes to provide affordable day care is treated as direct purchases of day care services (and not as subsidies to the private producers). Production of the private producers is therefore valued as payments from the parents plus the direct purchases from government.

3.23.10 Catastrophic and aid services is a group of social services which for the non-government part is dominated by social assistance services to disaster victims, refugees and the like, i.e., services provided by catastrophic and aid institutions. New statistical information became available in this area in 1997, although these accounting data had some deficiencies being non-standardized, however. In the NA estimation - for the annual changes - the cost data of six of the largest organizations were utilized. Further improvement has been achieved with the UT-project from 2005. Here, based on new information from NORAD (Norwegian Agency for Development Cooperation), exports of development aid services were estimated for the first time. The NORAD data give information on all development aids services by NPISHs, including the non-government financed part (about 10 per cent). NORAD is a directorate under the Norwegian Ministry of Foreign Affairs (MFA) and is responsible for coordinating the Norwegian developing aid activities abroad and for distributing the governmental resources in this field. The organisation keeps detailed records of the flow of resources managed by the organisation that has been utilized in the BoP and NA estimations for relevant items.

3.23.11 Output of the NPISHs also includes welfare services to old people and handicapped persons. The **annual social statistics** are the source for these estimations.

3.23.12 Output in non-market health and social work is specified by about 20 characteristic NNA-products (further differentiated as seen below). These are illustrated by 2019 figures:

Output in non-market health and social work. NOK billion in 2019 - Sources and methods.

<i>Non-market output of local government</i>		
861 064/065 Hospital services, treatment of drug addiction	2.4	KOSTRA - reporting system local to central government - specific items
862 114/115 Health services, diagnosis, treatment, rehab	9.9	KOSTRA - reporting system local to central government - specific items
862 314/315 Dental practice services	3.5	KOSTRA - reporting system local to central government - specific items
869 044/045 Health services, prevention, schools/health center serv.	6.1	KOSTRA - reporting system local to central government - specific items
869 014/015 Nursing and assistance in homes	59.4	KOSTRA - reporting system local to central government - specific items
870 024/025 Nursing and assistance in institutions	47.1	KOSTRA - reporting system local to central government - specific items
881 024/025 Nursing and welfare services to old persons and handicapped persons	6.0	KOSTRA - reporting system local to central government - specific items

889 114/115 Kindergarten	30.7	KOSTRA - reporting system local to central government - specific items
889 134/135 School leisure time-care services	6.2	KOSTRA - reporting system local to central government - specific items
889 914/915 Child care	10.5	KOSTRA - reporting system local to central government - specific items
889994/995 Other social services	9.0	KOSTRA - reporting system local to central government - specific items
<i>Non-characteristics output, local government</i>		
	0.6	Includes own account investment work and rent income
<i>Technical products</i>	8.3	For balancing of government consumption of fixed capital (distributed on 3 items, one for each industry)
<i>Non-market output of central government</i>		
861 002/003 Somatic hospital services	74.4	Hospital accounts - specific items
861 042/043 Psychiatric hospital services	21.0	Hospital accounts - specific items
861 062/063 Hospital services, treatment of drug addiction	3.3	Hospital accounts - specific items
861 072/073 Somatic services, rehabilitation	3.2	Hospital accounts - specific items
869 062/063 Somatic services, X-rays, laboratory work	14.1	Hospital accounts - specific items
869 072/073 Hospital services, ambulances	6.2	Hospital accounts - specific items
871 002 Social welfare in institution	0.1	Central government accounts - specific items
889 912/913 Child care	4.2	Central government accounts - specific items
<i>Non-characteristics output, central government</i>		
	5.3	Includes renting services of residential property and own account investment work and R&D
<i>Technical products</i>	12.3	For balancing of government consumption of fixed capital (distributed on 2 items, one for each industry)
<i>Non-market output of NPISH</i>		
861 010 Somatic hospital services	4.8	Hospital accounts - specific items
861 040 Psychiatric hospital services	2.4	Hospital accounts - specific items
861 060 Hospital services, treatment of drug addiction	2.1	Hospital accounts - specific items
861 070 Somatic services, rehabilitation	0.7	
869 040 Health services, prevention	0.3	
873 020 Nursing and welfare services to old persons and handicapped persons	15.2	KOSTRA - reporting system local to central government - specific items
889910 Child care	4.1	KOSTRA - reporting system local to central government - specific items
889 950 Services of catastrophic and aid institutions	4.1	Consist of services of catastrophic and aid institutions based on some accounting data (non-standardized) and BoP data.
<i>Non-characteristics output, NPISHs</i>		

	0	Own account R&D
Total output	382.2	

Intermediate consumption

3.23.13 In the NNA, **intermediate consumption** in non-market health and social work is estimated at NOK 73.2 billion in 2019. Number of NNA-products varies a lot between the sub-categories, like described above for education.

3.23.14 **Main sources used** are:

- Central government accounts
- Local government accounts
- Annual statistics of health institutions, incl. accounts of hospitals
- Annual social statistics

3.23.15 For intermediate consumption in central and local government, see general description above (aggregate data from central and local government accounts, further details from ad hoc cost survey data for local government).

3.23.16 For intermediate consumption **in NPISH units**, the estimation has been based on the utilization of central and local government accounts and the annual statistics on health institutions. Special calculations have been made for energy costs, while keeping total intermediate consumption unaffected. From 2001, estimation of intermediate consumption is amended to be residually determined.

Market health and social work

Output

3.23.17 In the NNA, **units of social work activities by disabled workers** are classified as social work in accordance with NACE. All output of social work activities by disabled workers is **non-characteristic**, with most output being manufacturing goods.

3.23.18 **Sources** used are central and local government accounts, annual accounting statistics for private (non-government) health institutions, information from the household budget surveys and annual social statistics and ad hoc income sample surveys of private medical practitioners, dentists, physiotherapists and psychologists. Supplementary sources used for extrapolation purposes are the Consumer Price Index material and data on numbers employed by occupation groups. The accounting statistics for private hospitals states total income (BDI=BruttoDriftsInntekt=Gross Operating Income) and total costs (BDU=BruttoDriftsUtgift=Gross Operating Costs), in addition to compensation of employees and user fees.

3.23.19 Sources are utilized in a manner as indicated below. **Market output of hospital services** is quite insignificant in Norway, confined to a few health institutions outside the county health plans not supported by National Insurance. Hospital services from private hospitals are estimated from identified items in the hospitals' accounts.

3.23.20 **Medical practice services** are mostly market. These are estimated from surveys of income and costs for medical practitioners run by Statistics Norway. Additional information includes current

grants from local government to physicians as contributors to the government health plans. These grants are not recorded as subsidies, but as local government consumption expenditure from purchases of medical practice services produced by market producers that are supplied to households as social benefits in kind according to ESA 2010 principles. Also, price data are used. A similar estimation is made for the occupation group of psychologists

3.23.21 Dental services are also mostly market activities. The market output is estimated from the demand side by using data from the household budget survey and the reimbursement from National Social Security Scheme. Dental services are not subject to wide support from National Social Security Scheme in Norway (except from special parts of the services provided).

3.23.22 Physiotherapists' services - also including chiropractors and homoeopaths - are estimated in a somewhat similar way as for medical practitioners, as reimbursement data from National Social Security Scheme are available. In fact, an unweighted average of this method, and the alternative method based on the income sample-based survey of physiotherapists and extrapolated by CPI and employment indicators, has been used for the output estimation of this NNA-product. This estimation fits well with the consumer expenditure data of the household sample surveys (when adjusting for the share of chiropractors).

3.23.23 Ambulance services belong to other human health services. Ordinary ambulance services on land and water are not recorded as ambulance services, as they are already included in hospital services. These services are financed by the regional health administration, and the sources are the annual statistics of health institutions. Ambulance services by air are both performed by the military service (non-market defense activity), by market producers in air transport as non-characteristic output, while one particular unit (NLA=NorskLuftAmbulanse=NorwegianAirAmbulance) - considered a market unit - seems to fit in for characteristic market production of ambulance services. Households' membership fees to NLA are thus recorded as payments for the service supplied by this producer (relatively small item).

3.23.24 Other human health services - excluding physiotherapists etc. and ambulance services, are based on data on reimbursements from National Insurance. There are reimbursements from local government and fees paid for these services as well. Indications reveal that the National Insurance share is some 70 per cent, local government some 20 per cent, and fees paid directly somewhat less than 10 per cent.

3.23.25 Output in market health and social work is specified by 11 characteristic NNA-products (plus the numerous products of social work performed by disabled persons). These are illustrated by 2019 figures:

Output in market health and social work. NOK billion in 2019 - Sources and methods.

<i>Characteristic output</i>		
861 010 Hospital services, somatic	2.1	Hospital accounts - specific items
861 070 Somatic services, rehabilitation	2,7	Hospital accounts - specific items
862 110 Basic medical and diagnostic services	14.3	Income/costs survey of medical practitioners run by Statistics Norway, government reimbursements
862 210 Specialized medical services, specialized physicians	4.1	Income/costs survey of medical practitioners run by Statistics Norway, government reimbursements
862 220 Specialized medical services, psychiatrists and clinical psychologists	1.3	Income/costs survey of medical practitioners run by Statistics Norway, government reimbursements
862 300 Dental practice services	14.6	Estimated from the demand side using data from the household budget survey and reimbursement from National Social Security Scheme
869 020 Services provided by physiotherapists and other para-medical persons	4.6	Items of reimbursement data from National Insurance, fees paid and other incomes of these practitioners are used
869 060 Somatic services, X-rays, laboratory work	2,9	Estimated from the demand side using data from the household budget survey and reimbursement from National Social Security Scheme
869 070 Ambulance services	1.5	Hospital accounts
889 109/110 Private kindergarten services	26.9	Accounts statistics (SBS-based)
889 120 Day-care services for young people	1.1	Indicator approach based on wage level of domestic services and numbers employed
<i>Non-characteristic output</i>		
Total output in social work activities by disabled persons	3.9	Data available from annual manufacturing statistics, including product details for subsequent distribution on NNA-products
	0.2	Including R&D and trade margins
Total output	80.0	

Intermediate consumption

3.23.26 In the NNA, **intermediate consumption** in market health and social work is estimated at NOK 24.3 billion in 2019. Number of NNA-products varies a lot, e.g., about 30 in human health activities and above 80 in social work activities by disabled workers.

3.23.27 Sources used include:

- Central government accounts (including National Insurance)
- Local government accounts
- Ad hoc cost survey data for local government

- Annual accounts statistics of health institutions
- Annual social statistics
- Ad hoc income sample surveys of private medical practitioners, dentists, physiotherapists, and psychologists

3.23.28 For intermediate consumption in units of **market producers**, the **ad hoc income sample surveys of private medical practitioners, dentists etc.** have been utilized, as they also contain information on intermediate consumption. For the minor items of hospital services and other human health services, an input share of 25 per cent has been assumed. For social work activities, information from the **annual social statistics** and the 1991 income survey of child day-care activities referred to above have been utilized. **Local government accounting data** have been utilized in the product distribution. Furthermore, the same distribution on products is assumed for combined nursing activities of NPISHs as for their human health activities. The resulting input share is estimated somewhat higher in market production of health and social services than in the corresponding production in government. Social work activities by disabled workers are excluded in that context. For the latter - primarily goods-producing activities - a much higher input share of 70 per cent is taken.

3.23.29 The following table is an excerpt from the Process table of NACE Q, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources. The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions.

NACE Q. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
				Benchmark extra-polarations	CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrapolation + Models		
<u>Output</u>	0	0	457198	0	0	0	0	0	0	457198
<u>IC</u>	0	0	101 147	0	0	0	0	0	0	101 147
	Adjustments									Final estimate
	Data validation	Conceptual		Explicit Cut-off	Explicit exhaustiveness		Balancing			
<u>Output</u>	0	5041		0	0		0		462239	
<u>IC</u>	0	824		0	0		0		101 971	

3.24 Arts, entertainment and recreation (R)

Contents

3.24.1 In the NNA, the activities of NACE R are **distinguished by 4 industries** within the two A64 headings:

90-92	Arts, entertainment, libraries, museums, other cultural and gambling activities		
900	Creative, arts and entertainment activities	M	N
910	Libraries, archives, museums and other cultural activities	M	N
920	Gambling and betting activities	M	
93	Sports, amusement and recreational activities		
930	Sports, amusement and recreational activities	M	N

3.24.2 All 4 industries contribute to **market production**. In addition, there are various industry specifications on **non-market production**:

Non-market production of central government:	910		
Non-market production of local government:	910		
Non-market production of NPISHs:	900	910	930

In other words, all four types of producers participate in **library, museums and other cultural activities**, while two types of producers - one market and one non-market - are involved in activities of **arts and entertainment activities** and in **sports and recreational services**. Only market producers are involved in **gambling and betting activities**.

3.24.3 NACE R has been regarded as one of the most **problematic sections** of NACE as exhaustiveness is concerned, due to relatively poor coverage of production statistics in this area, especially **before the days of the SBS**. It should however be mentioned that the quality of the Business Register has improved over the years; it has captured units in this industry also, and so register based annual accounts data (NO) are available for all units in parts of the industries.

3.24.4 Arts, entertainment and recreational activities make a **contribution of 0.9 per cent to GDP in 2019**. Value added share of output is 49 per cent in 2019, a relatively low ratio in services industries.

NACE R - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE R VA	Total VA	GDP	GNI
90-92	Creative, arts and entertainment activities	38.7	22.0	16.7	53.9	0.5	0.5	0.5
93	Sports activities and amusement and recreation activities	24.8	10.5	14.3	46.1	0.5	0.4	0.4
NACE R		63.4	32.5	31	100	1.0	0.9	0.8

3.24.5 From cost data considerations, it was earlier determined that most **private artistic creation and interpretation services**, as well as private library, archives, museums and other cultural services, should be treated as non-market output of NPISHs in the NNA. It was observed that central and local government accounts also contained information to be considered non-market output of central government and of local government of the same kind of services. In the **2011 main revision** however, newly estimated figures for own account production within market producers was introduced. The current figures for cultural services - as illustrated by 2019 figures of NNA - are distributed among the types of producer and type of services as follows:

Own account production. NOK billion. 2019.

Type of producer	Activity	
	Artistic creation and interpretation services	Library, archives, museums and other cultural services
Market producers	9.2	0.8
Non-market producers of NPISHs	7.4	2.0
Non-market producers of central government	0.0	5.2
Non-market producers of local government	0.0	8.7

3.24.6 In the NNA, **sporting activities and other recreational activities** are split into one market and one non-market part. The market part consists of the "professional" part of the sporting activities, such as providing sports facilities operation services and the professional parts of sports event promotion and organization services. The non-market part is concerned with mass sporting activities and other services related to sports

Non-market arts, entertainment and recreational services

Output

3.24.7 **Main sources used** are:

- Central government accounts
- Local government accounts
- Structural statistics related to project of John Hopkins
- Business register accounts data
- Cultural statistics
- Annual reports from theatres, the opera house and museums

3.24.8 The **annual central government and local government accounts** are used to estimate most of non-market output in **entertainment and other cultural activities**. In particular, these sources are used for the central and local government parts but have also been utilized for the estimation of non-market output of the NPISHs through transfers (grants) to these institutions. Other sources are also used, in particular, information in **cultural statistics, annual reports from theatres, the opera house and museums**, and other supplementary sources.

3.24.9 Non-market **output of NPISHs was estimated** as a benchmark in 1998 as the sum of transfers from central and local government - items identified in central government and local government accounts - and incomes from fees calculated from cultural statistics information. The latter was slightly adjusted to include free theatre groups. Although NPISH output should be based on costs of production, the moderately based estimate arrived at might take relevant income measures as a departure for this estimation. Number of artists and people employed were available from cultural statistics, while the annual reports from theatres and the opera house contained data that were utilized for estimating compensation of employees and intermediate consumption. More specifically, compensation of employees and intermediate consumption figures were calculated per artist for Oslo Philharmonic Orchestra, two theatres and the Norwegian Opera House, adding also activities of amateur performing groups with a lower compensation of employees being assumed. Compensation of employees and intermediate consumption components were arrived at by grossing up these unit values by artist numbers taken from the cultural statistics. For the subsequent years output was estimated using growth in government transfers and in other income, the latter covered by the cultural statistics.

3.24.10 Information from the **Norwegian Confederation of Sport (NCS)** has been utilized with items of the **central and local government accounts** in estimating output of **sporting activities and other recreational activities**. Other considerations have also played a role, such as making an estimate for communal work projects in this field. In the 1988 benchmarking study, NCS information indicates the level of sponsor support to sports and provides also survey data on incomes from ticket sales and membership fees. Surplus of Norwegian Pools (betting) is allocated partly to sports, tentatively related and distributed by 20 per cent to market output and 80 per cent to non-market output. Particularly for the latter part, there are also items of grants from central and local government (and later KOSTRA) that are taken into account for this output estimation. Income generated from communal work projects is also tentatively estimated, while output estimates for the operation of marinas, riding clubs and ski lifts is made in addition. Output (i.e., total production costs) was estimated at 82 per cent of total incomes in 1988, kept at that ratio for later years (supported by a 2001 study on sporting clubs at 86.7 per cent). Data from the **household budget surveys** are utilized for extrapolating purposes. In this

area, there are definitely certain problems of exhaustiveness in the field of other services related to sports events. Other services related to sports events are difficult to estimate. From 2001, NCS membership numbers (adjusted) have been utilized also as indicator for this industry, in addition to the government transfers. The sporting activities are described in a separate NNA industry (26 930) and the **voluntary work** in own account investments is identified as a specified product (931 008 Own account investments in sporting activities). Based on information from NCS, also the value of this voluntary work was estimated at NOK 500 million in 1988. For the subsequent years this product has been extrapolated using sources as described above and was for 2012 estimated at NOK 760 million.

3.24.11 Output is specified by 15 characteristic NNA-products (of which 2 are common but given separate NNA-products in central and local government). These are illustrated by 2019 figures:

Output in non-market arts, entertainment and recreational services. NOK billion in 2019 - Sources and methods.

<i>Non-market output of NPISHs</i>		
900 100 Performing artists services	6.4	Information from cultural statistics and annual reports of theatres and the opera house are utilized as benchmark, extrapolated by data from the household consumer surveys on fees from households and data on current government transfers to NPISHs
900 200 Services incidental to cultural/entertainment activities	1.0	Information from cultural statics on turn-over in cultural festivals used as indicator on the bench mark value
910 000 Library, archives, museums and other cultural services	2.0	Information from cultural statistics and annual reports of museums
931 008 Own-account construction in sporting and other recreational activities	0.9	Information from the Norwegian Confederation of Sport utilized in benchmarking share of own account work to total output (8 per cent)
931 200 Other sporting services	8.5	Information from the Norwegian Confederation of Sport is utilized (number of members) as indicator, items of grants from central and local government accounts, some further adjustments and addition for communal work projects etc.
<i>Non-characteristic output of NPISHs</i>		
	0.0	Own account R&D
<i>Non-market output of local government</i>		
900 104/105 Performing artists services	0.9	Detailed items of main source
910 104/105 Library and archive services	3.0	As above
910 204/205 Museums services and preservation services of historical sites and buildings	3.2	As above
<i>Non-characteristic output, local government</i>		
	0.0	Includes a small amounts of renting services of residential property and own account investment
<i>Technical products</i>	1.5	For balancing of local government consumption of fixed capital
<i>Non-market output of central government</i>		

900 102/103 Performing artists services	2.7	Detailed items of main source; all from fiscal accounts
910 102/103 Library and archive services	1.0	As above
910 202/203 Museums services and preservation services of historical sites and buildings	1.0	As above
<i>Non-characteristic output, central government</i>		
	0.2	Include own account work & R&D and renting of property
<i>Technical products</i>	0.4	For balancing of central government consumption of fixed capital
Total output	32.6	

Intermediate consumption

3.24.12 **Main sources used** are:

- Central government accounts
- Local government accounts
- Structural statistics related to project of Johns Hopkins
- Annual reports from theatres, the opera house and museums

3.24.13 For intermediate consumption in **NPISH units**, the cultural activities (the NNA-industry 900), the cost-based estimation of output from the **annual reports** of various cultural institutions would also provide for a corresponding estimate for intermediate consumption (fixed at 60 per cent of output). For libraries and museums, data from the accounts of relevant units are used. Finally, for sporting activities and other recreational activities (the NNA-industry 930), the intermediate consumption estimate has been determined either by direct accounts information (political parties) or by output as growth indicator used on a benchmark level (1997).

Market arts, entertainment and recreational services

Output

3.24.14 **Main sources used** are:

- Register based annual accounts data (NO)
- Cultural statistics
- Annual accounts of the nation-wide betting institutions
- Reports from Norwegian Performing Rights Society
- Reports from Norwegian Publishers' Association
- Central government statistics

3.24.15 What has been described above for business activities also applies to NACE 91 and 93 as far as market production is concerned. **Annual register-based accounts data** have been used for estimating output in private libraries, museums, sports, amusements and recreation activities. Statistics Norway has published **cultural statistics** issued every 3 or 4 years, in which information is available on various cultural activities and on activities of various institutions and bodies within the cultural sector, the production of some cultural benefits and figures on private and public expenditure for cultural purposes. Annual accounts of **nation-wide betting institutions** provide relevant information on most important gambling and betting services.

3.24.16 Services furnished by **individual artists and works of art** have a weaker basis and are often resorted to calculations from the user side. Some benchmark values are extrapolated using information from government accounts (stipendiums) or sales of books. Output from the production of originals is estimated in an explicit way, based on data on compensation from Performing Rights Societies.

3.24.17 Annual reports of the **nation-wide institutions of gambling and betting activities** (Norwegian Pools Ltd., Norsk Rikstoto) are main sources used in the output estimation of **gambling and betting activities**. Output of gambling and betting activities is measured as receipts from sales minus winnings paid. Most of these services are covered by annual reports of the respective institutions behind these services. Thus, apart from administrative expenses as output in basic prices, taxes on products are added when output is needed in producers' prices.

3.24.18 **Output of market arts, entertainment and recreational services is specified** by more than 12 characteristic NNA-products. These are illustrated by 2019 figures:

Output in market arts, entertainment and recreational services. NOK billion in 2019. Sources and methods.

<i>Characteristic output</i>		
900 100 Performing artists services	3.7	Register based accounts data (NO) for units in relevant sectors
900 200 Services incidental to cultural/entertainment activities	0.0	As above
900 310 Artistic creation	2.3	Bench mark 1991, extrapolated by value index based on book sales from Publishers' Association
900 390 Works of art	3.1	Bench mark 1988, extrapolated using data from Central Government accounts (stipendiums)
910 000 Library, archives and other cultural services	0.5	Register based accounts data (NO) for units in relevant sectors
920 000 Gambling and betting services	5.4	Annual accounts of Norwegian Pools Ltd., Norsk Rikstoto and annual publication from Norwegian Lottery Supervisory Authority
931 100 Sports facilities operation services	2.7	Register based accounts data (NO) for units in relevant sectors
931 200 Services of sports and athletics clubs	0.5	As above
931 300 Services of fitness facilities	5.1	As above
931 900 Other sporting services	1.5	As above
932 100 Fair and amusement park services	1.1	As above
932 900 Other recreational services	1.8	As above
<i>Non-characteristic output</i>	3.0	Includes own account investment work, trade margins, advertising services, rent income, food services and others
Total output	30.8	

Intermediate consumption

3.24.19 **Main sources used** are the same as for output.

3.24.20 In general, intermediate consumption in market production is estimated from the same sources referred to in the output description. **Annual register-based accounts data (NO)** provide information on total intermediate consumption for private libraries, museums, sports, amusements and recreation activities. The intermediate consumption estimate for **gambling and betting activities** has a firm basis in the **accounts of the main betting institutions**. For **creative, arts and entertainment work**, intermediate consumption is assumed being 22 per cent of output.

3.24.21 The following table is an excerpt from the Process table of NACE R, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources (SBS) and benchmark extrapolations. The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions..

NACE R. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
Benchmark extra-polations				CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrapol +Models			
Output	0	0	44441	18730	0	0	0	18730	0	63171
IC	0	0	20232	11798	0	0	0	11798	0	32030
	Adjustments							Final estimate		
	Data validation	Conceptual		Explicit Cut-off	Explicit exhaustiveness	Balancing				
Output	0	259		0	0	0		63430		
IC	0	466		0	0	0		32496		

3.25 Other service activities (S)

Contents

3.25.1 In the NNA, the activities of NACE S are **distinguished by 3 industries** within the three A64 headings:

94	Activities of membership organizations		
940	Activities of membership organizations	M	N

95	Repair of computers and personal and household goods	
950	Repair of computers and personal and household goods	M
96	Other personal service activities	
960	Other personal service activities	M

3.25.2 All three industries contribute to market production, one also to non-marked production represented by membership organizations.

3.25.3 Other service activities make a **contribution of 0.9 per cent to GDP in 2019**. Value added share of output is 57 per cent in 2019, a relatively low ratio in services industries.

NACE S - NOK billion and value added percentages in 2019.

		NOK billion			VA as per cent of			
		Output	Intermediate consumption	Value added (VA)	NACE S VA	Total VA	GDP	GNI
94	Activities of membership organisations	34.9	17.8	17.1	51.8	0.5	0.5	0.5
95	Repair of computers and personal and household goods	2.41	1.0	1.3	4.0	0.0	0.0	0.0
96	Other personal service activities	20.6	6.0	14.6	44.3	0.5	0.4	0.4
NACE S		57.9	24.9	33.0	100.0	1.0	0.9	0.9

Membership organisations

Output

3.25.4 **Membership organisations** are divided into two categories, i.e., services furnished by business employers and professional organizations which are treated as market output, and the remaining membership organizations services which are treated as non-market output of NPISHs. The latter is the larger category, consisting of services furnished by trade unions, religious services and services furnished by political organizations, by environment-protecting organizations, by automobile clubs, etc., while athletic clubs and federations are included with sporting activities. The **non-market part** is estimated partly based on **central government accounts** that provide data on grants to such organizations, and partly from special calculations utilizing **structural data related to project of Johns Hopkins**. These statistics covered census-type data for 1997 on compensation of employees, intermediate consumption and investments obtained from 3500 enterprises. There are reports available on Norway's activities under this project study.

3.25.5 Main sources used are:

- Central government accounts
- Local government accounts
- Statistics on Membership in organisations, religious and life stanc Communities
- Annual accounts of student co-operatives, trade Unions and political parties

3.25.6 Current economic information is not available for the **membership organizations**. In the NNA, structural 1997 data of the Johns Hopkins project have been **extrapolated** by volume and price indicators. Non-market output furnished by trade unions is calculated by number of members and wage and salaries per full-time equivalent employee as indicators until 2000, while estimated average membership fees are used as price indicator after 2000. At this time, there are no annual accounts available for large unions and employers' or professional organizations. Data for 1997 have earlier been available from a special survey. Information on grants to NPISHs - as recorded in **central government accounts** - is a major indication of the costs to determine output estimate. Other information available is mostly confined to automobile clubs, from the annual reports of the Norwegian Automobile Association. A late improvement should be mentioned: some aid organizations are now covered by the new large source on foreign transactions (UT project). This concerns however not the estimation of output *per se*, but rather the reallocation of part of development aid services from final consumption of NPISHs to the exports use category.

3.25.7 For market output of **activities of membership organizations**, special calculations are necessary. Numbers employed in NHO establishments and information on membership fees in the **annual reports of NHO** (Confederation of Norwegian Business and Industry) is used as indicator. Business and professional organizations outside NHO are covered in a similar way assuming membership fees at about 75 per cent of the NHO level of fees. For extrapolation, the method is simplified by using as indicator numbers employed in these organizations and membership fees information from the annual reports of NHO (See also description above on NPISHs.).

3.25.8 Output in activities of membership organisations is specified by 3 characteristic products. These are illustrated by 2019 figures below.

Output in activities of membership organisations. NOK billion in 2019 - Sources and methods.

<i>Non-market output of NPISHs</i>		
942 000 Services furnished by trade unions	8.4	Special calculation based on number of members and estimated average membership fees
949 910 Other membership organizations services	17.8	Special calculations and utilizing information on grants to NPISH from central government
<i>Market output</i>		
941 000 Services furnished by business organizations, employers' association etc.	8.6	Benchmark 1988 extrapolated by number of members/employed and wage index
<i>Non-characteristic output</i>		
	0.0	Rent income student dwellings and own account R&D
Total output	34.9	

Intermediate consumption

3.25.9 In the NNA, **intermediate consumption** in activities of membership organisations is estimated at NOK 17.8 billion in 2019. Number of NNA-products is 30 in non-market and 18 in the market activities.

3.25.10 Intermediate consumption in activities of membership organisations is estimated by utilizing annual reports from organizations. For services furnished by trade unions and other membership organizations services, intermediate consumption is estimated from the SBS-based data from the Johns Hopkins project and or extrapolation using value of output as indicator.

Repair of computers, personal and household goods

Output

3.25.11 **Annual surveys of repair shops etc.** are covered by annual SBS-based accounting statistics (main source), see chapter 3.4. Only market activities are observed,

3.25.12 Output of **repair of computers and of household and personal goods** are specified by 2 characteristic NNA-products. These are illustrated by 2019 figures:

Output in repair of computers etc. NOK billion in 2019 Sources and methods.

<i>Characteristic output</i>		
951 000 Repair services of computers and communication equipment	1.1	SBS-based data providing a basis
952 000 Repair services of personal and household goods	1.1	As above
<i>Non-characteristic output</i>		
	0.1	Includes trade services (trade margins) from sale of goods and income from rental services
Total output	2.4	

Intermediate consumption

3.25.13 **Intermediate consumption** in repair activities is estimated at NOK 1,0 billion in 2019. Number of NNA-products is 38.

3.25.14 Intermediate consumption in activities of repair of computers and of household and personal goods is estimated by utilizing the same source as used for output estimations, see chapter 3.4.

Other personal services

3.25.15 Main sources

- Annual accounting data (SBS-based)
- Separate estimations for prostitution

3.25.16 To take into account unregistered product, 36 per cent is added on the production of NACE 96.02 (hairdressing and other beauty treatment services). The estimation is based on comparisons between consumption of hairdressing and other beauty treatment services and wholesale and retail trade sales in NACE 96.02.

3.25.17 Output of **other personal service activities** is market output and is specified by 6 characteristic NNA-products. These are illustrated by 2019 figures:

Output in other personal services. NOK billion in 2019 Sources and methods.

960 100 Washing and dry-cleaning services	2.9	SBS-based data providing a basis.
960 200 Hairdressing and other beauty treatment services	13.5	SBS-based data providing a basis.
960 300 Funeral and related services	1.2	SBS-based data providing a basis, adjusted during commodity flows balancing
960 400 Physical well-being services	1.2	SBS-based data providing a basis, adjusted during commodity flows balancing
960 900 Other services n.e.c.	0.9	SBS-based data providing a basis., adjusted during commodity flows balancing
960 990 Prostitution	0.1	Separate estimations (see also chapter 7)
<i>Non-characteristic output</i>		
	1.0	Includes trade services (trade margins) from sale of goods and income from rental services
Total output	20.6	

Intermediate consumption

3.25.18 **Intermediate consumption** in other personal service activities is estimated at NOK 6.0 billion in 2019. Number of NNA-products is 40.

3.25.19 The sources for the estimation of intermediate consumption are the same as for output, i.e., mainly accounting data (the SBS).

3.25.20 The following table is an excerpt from the Process table of NACE S, summarizing the source data and adjustments made for the year 2019. As seen from the table, output and intermediate consumption have basis in annual combined data sources and benchmark extrapolations. The adjustments made to the source data are of a conceptual nature to transform data in the sources into the national accounts definitions, and adjustments for explicit exhaustiveness and balancing.

NACE S. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	<i>Surveys & Censuses</i>	<i>Administrative Records</i>	<i>Combined Data</i>	<i>Extrapolation and Models</i>					<i>Other</i>	<i>Total</i>
				<i>Benchmark extra-polarations</i>	<i>CFM and ratios</i>	<i>CFC(PIM) & Imputed Dw.</i>	<i>Other E&M</i>	<i>Total Extrapolation + Models</i>		
<i>Output</i>	0	0	27 917	26 247	0	0	0	26 247	0	54 164
<i>IC</i>	0	0	12 454	12 166	0	0	0	12 166	0	24 620
	Adjustments							Final estimate		
	<i>Data validation</i>	<i>Conceptual</i>	<i>Explicit Cut-off</i>	<i>Explicit exhaustiveness</i>	<i>Balancing</i>					
<i>Output</i>	0	29	0	3 701	-1	57 893				
<i>IC</i>	0	151	0	76	1	24 848				

3.26 Private households with employed persons (T)

Contents

3.26.1 In the NNA, the activities of NACE T are **included in one industry** within the A64 heading:

97 Private households with employed persons

970 Private households with employed persons O

3.26.2 This industry is categorized as **production for own final use (consumption)**, see symbol O above. Private households with employed persons make a small **contribution of 0.0 per cent to GDP** in 2019. Value added share of output is 100 per cent, since by convention output = value added (= compensation of employees).

NACE T. NOK billion and value added percentages in 2019.

		<i>NOK billion</i>			<i>VA as per cent of</i>			
		<i>Output</i>	<i>Intermediate consumption</i>	<i>Value added (VA)</i>	<i>NACE T VA</i>	<i>Total VA</i>	<i>GDP</i>	<i>GNI</i>
97	Activities of households as employers	0.3	0.0	0.3	100.0	0.0	0.0	0.0
NACE T		0.3	0.0	0.3	100.0	0.0	0.0	0.0

Output

3.26.3 According to the **conventions adopted** in the SNA and ESA, output is equal to compensation of employees, and therefore equal to value added of this industry.

3.26.4 **Source used** is:

- *A-melding*

3.26.5 In the NNA, it has been decided to apply basically the results obtained from the main RWS Register on wages and salaries (administrative source of the Norwegian Directorate of Taxation) in estimating output and compensation of employees in this industry.

3.26.6 **Output is specified** by one characteristic NNA-product (970 000).

Intermediate consumption

3.26.7 **By convention**, intermediate consumption of this industry is zero.

3.26.8 The following table is an excerpt from the Process table of NACE T, summarizing the source data and adjustments made for the year 2019. As seen from the table, only output is estimated based on register information on compensation of employees.

NACE T. Excerpt from Process Table. NOK million. 2019.

	Basis for NA Figures									
	Surveys & Censuses	Administrative Records	Combined Data	Extrapolation and Models					Other	Total
				Benchmark extrapolations	CFM and ratios	CFC(PIM) & Imputed Dw.	Other E&M	Total Extrap +Models		
Output	0	0	0	272	0	0	0	272	0	272
IC	0	0	0	0	0	0	0	0	0	0
	Adjustments							Balancing	Final estimate	
	Data validation	Conceptual		Explicit Cut-off	Explicit exhaustiveness					
Output	0	0		0	0		0	272		
IC	0	0		0	0		0	0		

3.27 Treatment of extra territorial organisations and bodies (U)

3.27.1 The issue here is related to the concepts of **economic territory, residence and centre of economic interest**. In the context of the NA, these are activities not treated as industrial (no branch

nor NACE U), rather treated in a more fundamental way in defining production boundary and residence. In the Business Register, NACE U mainly consists of foreign embassies and consulates located in Norway, units that are non-residents in terms of GDP and the NA. There are just a few units recorded in the register under NACE U.

3.27.2 It may be mentioned that **activities of embassies and consulates** are recorded in the Balance of Payments, in the items of travel (at least for publication). In Norway, the value of imports in this respect is estimated from the government accounts, while the value of exports has been estimated on a weaker basis (smaller value).

3.28 Taxes on products, excluding VAT

3.28.1 In the NNA, **taxes on products excluding VAT** consist of all taxes on products except value added type taxes, including the ESA 2010 concepts:

D 212	Taxes and duties on imports excluding VAT
D 214	Taxes on products, except VAT and import taxes.

3.28.2 Items of other taxes on products are normally **not easily categorized** into these two main classes, although several of the items seem relevant for one of the two classes only. One clear exception is of course customs duties that exclusively belong to the first main class and sub-category D 2121 Import duties. In general, taxes on products are **usually linked to both domestic production and imports**. Goods domestically produced are taxed when leaving storehouse for sale or for own final use. Goods produced abroad are taxed when being imported. Treating these taxes as commodity flows, they all become parts of product flows in purchasers' prices in the use table and subsequently in the supply table when balancing the goods and services accounts involved.

3.28.3 Technically - in the central framework of commodity flows - taxes on products appear as **value components** of each product flow, i.e., as part of producer's price (in the NNA coded as 11, except that any trade margin component part is coded separately as 15). This treatment is a consequence of the system flexibility implemented in Norway. For taxes on products, totals by product are **first estimated in the use table**. Next, a special calculation is carried out to distribute totals on domestic production flows and imports. This calculation first **establishes D 212** from import CIF shares of total supply for each product. Finally, **D 214 is distributed** by industries of domestic production for each product, in proportion to their output values. Thus, separate estimates on D 212 and D 214 are arrived at, and they are in principle values at accruals basis.

3.28.4 Producers and importers are normally obliged to register and submit underlying information for this kind of taxation by 18th of the following month, with the estimated tax amount paid to the district tax authorities. In the **central government accounts**, taxes are usually recorded on **cash basis** (actual receipts), while the **NNA** applies the **accruals principle**. Accruals values are often estimated from the following **standard rule** (time lag of 1 month):

$$\text{accruals value in period } t = \text{value of receipts in period } t \text{ from February to January } t+1$$

It presupposes that actual receipts are known on a monthly basis and that taxes are paid when due. In some cases, accruals values are **known from direct sources**. In other cases - lacking the necessary information - accruals value is set **equal to actual receipts**, by convention.

3.28.5 The clarification in the ESA definition on taxes linked to imports to include the amounts of such taxes even when they were levied on households - entered into the measures under Article 6 of the GNP Directive - does not bring about any particular revision of the Norwegian figures. In normal cases, the Government receipts are assumed to include the taxes levied on households in addition to the amounts paid by professional importers.

3.28.6 When distinguishing between **taxes on products** and **other taxes on production**, borderline cases do occur. In the NNA, taxes on production and imports are normally treated as taxes on products only when there is a **clear link to goods or services**. When such a link is hard to define, they are thus treated as other taxes on production (D 29 in ESA 2010).

3.28.7 In Norway, about **27 different taxes** on production and imports are **treated as taxes on products**. These are aggregated into **YTART**, i.e., categories, for use in the NA and subsequently in the macro-economic models operated by Statistics Norway. The taxes are described in the table below, by YTART and type (volume or value tax).

Taxes on products, excluding VAT. 2019. NOK billion.

<i>YTART</i>	<i>Name*</i>	<i>Type</i>	<i>Amount</i>
312	Sugar and chocolate and candy tax	Volume	1.6
321	Tax on non-alcoholic beverages	Volume	3.1
322	Tax on alcohol (beer)	Volume	6.2
325	Tax on alcohol (spirits and wine)	Volume	8.3
331	Tax on tobacco goods	Volume	6.3
341	Tax on greenhouse gasses hydrofluorocarbon (HFK) and perfluorocarbon (PFK)	Volume	0.3
345	Diesel tax	Volume	10.0
346	Tax on mineral oils	Volume	1.8
347	Tax on lubricating oils	Volume	0.1
348	Tax on NOx emissions, petroleum sector excepted	Volume	0.1
349	Tax on electricity	Volume	10.7
350	Tax on electricity paid to the Norwegian Energy Fund	Volume	0.7
352	Motor vehicle registration tax	Volume	13.1
361	Petrol tax	Volume	5.2
364	Tax on CO2 emissions, petroleum sector excepted	Volume	8.1
365	Sulphur Tax	Volume	0.0
367	Basic and environmental tax on disposable beverage packaging of wine	Volume	0.2
368	Basic and environmental tax on disposable beverage packaging of beer	Volume	0.7
369	Basic and environmental tax on disposable beverage packaging of non-alcoholic beverages	Volume	1.2
375	Tax on pharmaceutical products	Value	0.2
379	Tax on air traffic passengers	Volume	1.9
381	Income from the state gaming company (Norsk Tipping AS)	Value	5.2
382	Horse betting tax (Totalizator tax)	Value	0.1
385	Stamp duty on real estate transfers	Value	10.3
397	Customs duties	Value	3.1
Total			99.1

* According to National Tax List

3.28.8 Road tax on fuel is duty payable on petrol, unmarked mineral oil (diesel), bioethanol, natural gas and LPG intended for automotive use and is imported into Norway or produced in Norway. Tax rates differ for different fuel types and are specified as tax per litre. This is in addition to Tax on CO2 emissions and the sulphur tax on mineral products.

3.28.9 The motor vehicle registration tax is an excise duty that must be paid upon initial registration of a motor vehicle in Norway. It is calculated based on the vehicle's tax group, kerb weight, CO2 emissions, NOx emissions and cylinder capacity. For some vehicles, engine power is also included in the calculation.

3.28.10 Tax on tobacco goods is payable on all tobacco products domestically produced or imported, with differentiated tax rates by quantity of each product.

3.28.11 Tax on alcohol is levied on all alcoholic beverages containing more than 0.7 percent by volume of alcohol that are either imported into Norway or produced in Norway. One part is related to quantities sold by alcoholic grades, another part is sales values also by alcoholic grades, and a third part to their packing (from 1989).

3.28.12 Tax on electricity refer to two separate forms: (i349) a tax on the use of electric energy (also for own final use), whether domestically produced or imported, and then (ii350) from 1.1.93 another tax - motivated by the new energy market - on the production of electric energy. Tax rates are set per kWh, while certain industries and regions are exempted or paying reduced rates.⁴

3.28.13 Tax on CO₂ emissions is payable on mineral oil, petrol, gas, natural gas and LPG that's either imported into Norway or produced in Norway. The taxes are calculated per standard litre of mineral oil and petrol, and per standard cubic metre (Sm³) and kilogram for natural gas and LPG respectively. A basic tax is also payable on mineral oils, along with a sulphur tax on mineral oils containing more than 0.05 percent by weight of sulphur.

3.28.14 Stamp duty on real estate transfers is a tax payable when registering documents that transfer rights to real property. It has been one of the "borderline" taxes, now treated as tax on products, while earlier treated as other tax on production as it has been problematic to relate the tax flows to particular transaction in products. Eurostat has decided that registration charges on the change of ownership of financial assets when these are paid in the form of stamp duties, is to be recorded within taxes on products.

3.28.15 Tax on disposable beverage packaging. Two types of tax are payable on beverage packaging: environmental tax and basic tax. The taxes are calculated per packaging unit.

3.28.16 Income from the state gaming company (Norsk Tipping AS) is a notional tax from the surplus of Norsk Tipping AS (football betting and Lotto).

3.28.17 Tax on non-alcoholic beverages is a tax on carbonated non-alcoholic beverages domestically produced or imported, tax rate set by quantity (per litre), and in addition a tax on disposable beverage packaging

3.28.18 Sugar and chocolate and candy tax is a tax on chocolate and sugar confectionery etc. domestically produced or imported, tax rate set by quantity.

3.28.19 Tax on mineral oil is a tax on various refined petroleum products domestically produced or imported, in three parts (base tax, CO₂ -tax and additional tax) and stipulated by quantity (per litre).

3.28.20 Taxes on products not mentioned above include the following minor items: tax on lubricating oil, tax on sulphuric products, tax on pharmaceutical products, , , tax on NO_x (products causing NO_x pollution) and tax on air traffic passengers.

3.28.21 Finally, another issue related to valuation should be clarified. In this category, taxes on products, excluding VAT, **no adjustments** are made in the NNA to take account of **tax amounts unlikely to be collected** (except for VAT, see below).

3.29 Value added tax (VAT)

3.29.1 The treatment of value added tax (VAT) in the national accounts has been an issue since **VAT was introduced in Norway in 1970**. Before then, Norway had a general purchase tax. In the beginning, the choice whether to record VAT gross or net was an issue of considerable uncertainty as this was not guided explicitly from SNA68. Statistics Norway decided at that time to go for the **gross treatment** (showing, inter alia, intermediate consumption including deductible VAT), while most other countries eventually introduced the net system, which eventually became international standard. Norway switched from the gross to the net system in the mid-1980s.

3.29.2 The **net system of VAT** means that value added tax is recorded in terms of non-deductible VAT, thus excluding deductible VAT from purchasers' prices of intermediate consumption and gross fixed capital formation.

3.29.3 The **VAT system in Norway** applied for a long period one single tax rate, i.e., no differentiated rates being taken although differentiation is common in other countries. It also means that a degressive tax system does not exist in Norway. Neither does a flat-rate VAT system for agriculture - in many countries referred to as a special institutional arrangement - exist in Norway, as no special rules are faced by farmers as far as VAT is concerned.

3.29.4 In the NNA, VAT on products is basically **recorded according to theoretical VAT**. That means non-deductible VAT is calculated from all relevant product flows of the use table as a base. Information on tax evasion was just recently brought into this context. Values of the transactions in the use table subject to VAT include intermediate consumption and gross fixed capital formation of the exempt activities and a large part of household final consumption expenditure, and they are accordingly **multiplied by the product VAT rate**. The calculation of theoretical VAT is maintained as the actual method applicable to the SUT framework, as always inspired through the national accounts compilation approach in Norway in general.

3.29.5 **The supply table lists total theoretical VAT by the NNA products**. VAT totals by product are obtained from the calculation just cited in the use table.

3.29.6 At the **category level** of GDP components, just one recording of VAT is involved, i.e., **D 211 Value added type taxes**.

3.29.7 The **theoretical VAT calculation** and analysis involve a **five-step procedure** in the regular compilation of national accounts. The steps are:

- (1) Establishing a VAT catalogue on VAT rate per product flow
- (2) Calculating non-deductible VAT by products and uses in the use table
- (3) Recording total non-deductible VAT by products in the supply table
- (4) Recording total non-deductible VAT as component of GDP in the use table
- (5) Analysing the theoretical VAT data and comparing them with actual VAT etc.

3.29.8 The **VAT catalogue at step (1)** identifies one VAT rate of each NNA-product and cross-classified with use of product. Products subject to regular non-deductible VAT constitute the normal

case. The catalogue - actually organized in three sub-catalogues - is a means to complement this by listing:

(i)	Products not subject to regular VAT rate
(ii)	Uses for which VAT is not calculated, <i>inter alia</i> , intermediate uses and categories of gross capital formation for which VAT is deductible
(iii)	Products subject to VAT regardless their uses.

3.29.9 The **regular VAT rate** was 20 per cent in period 1970-1992, then increased to 22 per cent in 1993, in 1995 further increased to 23 per cent, and in 2001 increased to 24 per cent, and further to 25 per cent in 2005. Under sub-catalogue (i), there are listed zero VAT rate to products - predominantly services, but also books, newspapers etc. Until 2001, VAT rates have not been differentiated, except for some quite limited cases. However, a differentiation has been introduced by applying lower VAT rate (now 15 per cent) for food. From 2001, the scope for VAT on services has been extended as well. A handful of products are listed with a calculated VAT rate between the regular rate and zero, e.g., periodicals (which may be partly subject to regular VAT rate and partly exempted). Uses of exports and changes in inventories are further examples under sub-catalogue (ii), which also contain uses that are partly exempted. Sub-catalogue (iii) contains a short list of a few exceptional cases for various reasons where VAT rate applies regardless their uses.

3.29.10 At step (2), transactions in the use table (products x uses) serve the basis and are used with the VAT catalogue to calculate the VAT theoretical values of the NNA. They are recorded as non-deductible VAT value component of each product flow in the use table. It should be observed that the value component system of the NNA makes it possible to adapt to various value transaction concepts, whether the estimates of uses based on statistical sources are less of deductible VAT or less of all VAT. **Y**

3.29.11 At step (3), by summing over all uses of each product in the use table, total non-deductible VAT of each product is transferred to become a separate column by the NNA products in the supply table to enable the balancing of products in the supply and use tables.

3.29.12 At step (4) - from the VAT sum over the products - total **theoretical VAT** as GDP component of D 211 Value added type taxes is arrived at. These are illustrated below by 1990, 2000, 2012, and 2019 figures - and corresponding percentages of GDP:

Theoretical VAT = Total non-deductible VAT. NOK billion and per cent of GDP.

<i>Year</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
1990	58.2	8.1
2000	121.7	8.3
2012	229.0	7.7
2019	318.1	8.9

3.29.13 Distribution of **non-deductible VAT by main categories of uses** can be extracted from the details of the use table.

Non-deductible VAT by main category of use. NOK billion and percentage. 2019.

	<i>NOK billion</i>	<i>Percentages</i>
Household final consumption expenditure	162.5	51.1
Intermediate consumption	74.0	23.3
Gross fixed capital formation	76.8	24.1
Government and NPISHs consumption expenditures (direct purchases)	4.7	1.5
Total non-deductible VAT	318.1	100.0

3.29.14 A quite interesting control or confrontation should be the one between **theoretical VAT** calculated in the national accounts and **actual VAT** recorded in the government accounts as VAT receipts or actually received by government. Main results of this kind of check are a difference of 3.6 per cent on average for the period 2000-2012, and that of 3.5 per cent for 2019, when using time lag adjusted government accounts figures. The small and positive differences show that more activity is covered than is evidenced by the taxation authority. Statistics Norway believes that the size of these differences is reasonably well in their context as checks to ensure exhaustiveness. Studies and comparisons made in both the 1995, 2002, 2006, 2011, 2014, and 2019 revisions have confirmed the picture given above.

3.29.15 In the 2006 main revision as an adaption to Commission Regulation of 7th November 2002, **GDP is adjusted by the difference between theoretical VAT and non-paid VAT**. For most of the years 1970 - 2005 this adjustment was negative, reflecting that theoretical VAT has been estimated higher than actual paid VAT. For the year 2003 GDP was in the 2006 main revision revised down NOK 5.2 billion or 0.3 per cent due to the new VAT estimation method.

3.29.16 Finally, as a small clarification, the recorded actual amounts in the government accounts seem to include fines and interest for late payment.

3.30 Subsidies on products

3.30.1 In the NNA, subsidies on products consist of **item D 319 Other subsidies on products exclusively**. They are paid by central government. Import subsidies - ESA item D 311 - are non-existent in Norway.

3.30.2 **Subsidies on products** have relevance in particular for products within agriculture. Also research and development services are subsidized in Norway. The **GDP share of subsidies on products is 0.2 per cent in 2019**.

3.30.3 Subsidies on products are **recorded at values of actual payments**, with the exception of **subsidies on agricultural products** that are valued **at accruals basis**. This practice is very much influenced by problems of following the theoretical estimation approach (as for VAT) or the time-lag adjustment approach for lack of data recordings.

3.30.4 The **borderline between subsidies on products and other subsidies on production** has often been difficult to draw. Payments from central government concerning the Agricultural settlements are recorded in the central government accounts. Subsidies on milk and milk products are a main ingredient here, and one part (the base grant) is recorded as other subsidies on production to

manufacture of dairy products, while the remaining part is recorded as **subsidies on agricultural products**.

3.30.5 Another borderline problem is the one **against government final consumption**. In the area of health and social work, in particular, there have been alternative treatment options open for government payments. One is to producers in respect of their production, either as subsidies in general, or as individual government consumption expenditure (eventually actual individual consumption of households) when goods and services are delivered directly to households according to a legally established right. In this respect, a third possibility has been the treatment as social benefits to households. In the NNA, there has been a shift towards more such payments being recorded as government consumption expenditure and eventually as household actual consumption.

3.30.6 Government payment to public corporations (and quasi-corporations) **to compensate for persistent loss** is another problem area. The question is whether to treat such cases as subsidies or not. Treatment of persistent loss on the State railway corporation - example of a problematic case – is to treat this as a subsidy in the NNA. However, these payments have been **recorded as other subsidies on production** paid to the railway industry, and therefore not part of subsidies on products described here.

3.30.7 In Norway, some **9 different subsidies** on production are **treated as subsidies on products**. These are aggregated into YTART, i.e., categories, for use in the NA and subsequently in the macro-economic models operated by Statistics Norway. The subsidies are described in the table below, by YTART and type (volume or value tax).

Subsidies on products. 2019. NOK billion.

<i>YTART</i>	<i>Name</i>	<i>Type</i>	<i>Amount</i>
632	Subsidies on raw milk from bovine cattle	Volume	0.6
633	Subsidies on raw milk from sheep and goats	Volume	0.1
692	Subsidies on wool	Value	0.1
693	Subsidies on potatoes	Volume	0.0
694	Subsidies on bovine cattle, sheep and pig	Volume	1.4
695	Subsidies on sheep	Volume	0.1
697	Subsidies on fruit and vegetables	Volume	0.1
698	Subsidies on eggs	Volume	0.0
672	Subsidies on R&D	Value	5.1
Total			7.5

3.30.8 Product subsidies to agriculture are subsidies paid by central government under the label of Agricultural settlements. They cover a number of sub-items that are considered as subsidies of this kind. Most important are price subsidies, and cost-reducing and other direct transfers, but these items are not allocated to agriculture in total, neither linked to products altogether.

3.30.9 Product subsidies to research and development are various subsidies related to research and development services.

3.31 Conclusions

3.31.1 **A variety of methods are applied** in the production approach - reflecting different types of producers and different circumstances in the industries, such as whether statistical sources or administrative sources, or both, are used.

3.31.2 **Strength and suitability** of the methods applied are considered to be **on the positive side in general**. As mentioned several times in the Inventory, one important reason for a positive development has been **utilizing more accounting data in the NA estimations**, i.e., accounting data that also meet obligations in a number of industries in terms of Structural Business Statistics. See also description to the conclusions of chapter 4 below.

3.31.3 **Areas that need further investigation** include service industries for which the SBS-based statistics have not yet been introduced, in particular in market part of NACE P, Q and R. Furthermore, in view of the new KOSTRA source, the transactions of local government should be further elaborated and also in more detailed than before. And further investigation into using administrative accounting data for non-market production in NPISHs should be explored, although the main revisions since 2000 have brought considerable progress in treatment of this type of non-market producers in the NNA.

3.31.4 It is not known of any non-compliance with ESA 2010 of considerable size, as far as the production approach is concerned.

3.31.5 **Areas where improvements of methods are needed** primarily involve long-term efforts such as valuation at accruals' basis in government transactions, and the full integration between the production and income generation accounts of the NA central framework and the institutional sector accounts.

CHAPTER 4 THE INCOME APPROACH

4.0 GDP according to the income approach

4.0.1 The income approach is illustrated below for 2019 in two overview tables, one table by main components and main institutional sectors, and the other table by main components and NACE section.

4.0.2 First, illustration is given below for 2019 of the **main components of the generation of income account** for the **total economy** and for the **five main institutional sectors**. Different valuation principles for total economy and the sectors create deviations in the table (see also footnotes).

Main components of GDP by main institutional sectors. NOK billion. 2019.

<i>Component</i>	<i>Total economy</i> <i>S.1</i>	<i>Non-financial enterprises</i> <i>S.11</i>	<i>Financial enterprises</i> <i>S.12</i>	<i>General government</i> <i>S.13</i>	<i>Households</i> <i>S.14</i>	<i>NPISH</i> <i>S.15</i>
D.1	1 733.2	1 067.9	50.6	545.2	22.0	47.5
D.21	406.1					
D.29	32.1	21.9	2.3	0.2	7.7	0.0
D.31	7.5					
D.39	57.9	36.1	1.6	-	20.2	-
P.51c	650.8	388.9	9.9	129.8	115.9	6.2
B.2+B.3	1457.4	990.0	102.0	129.8	229.3	6.2
B.1 inst.1)	3 164.8	2043.8	153.3	675.2	238.8	53.7
B.1g* 2)	3 563.5					

- 1) Total Gross value added distributed by institutional sector at basic prices.
2) Gross domestic product at market prices.

The main components are:

- D.1 Compensation of employees
- D.21 Taxes on products
- D.29 Other taxes on production
- D.31 Subsidies on products
- D.39 Other subsidies on production
- P.51c Consumption of fixed capital
- B.1 Value added, gross/Gross domestic product
- B.2 Operating surplus, gross

B.3 Mixed income, gross

4.0.3 The overview table by NACE section follows next: Main components of value added by industries.

NACE 64. Main components of value added. NOK million. 2019

<i>NACE Section</i>	<i>D.1</i>	<i>D.29</i>	<i>D.39</i>	<i>P.51c</i>	<i>B.2+B.3</i>	<i>B.1</i>
A. Agriculture, forestry and fishing	16028	1114	13671	16559	62244	65715
B. Mining and quarrying	80343	7585	660	149849	409022	496290
C. Manufacturing	157989	1323	4251	43924	65200	220261
D. Electricity, gas, steam and air conditioning supply	16583	4092	75	20463	57761	78361
E. Water supply; sewerage; waste management and remediation activities	11953	98	126	9230	10414	22339
F. Construction	148789	629	3924	16745	69734	215228
G. Wholesale and retail trade; repair of motor vehicles and motorcycles	179868	3223	3980	21774	79745	258856
H. Transporting and storage	95249	783	12727	37103	60403	143708
I. Accommodation and food service activities	36026	129	740	3827	12056	47471
J. Information and communication	87014	434	3590	29804	61002	144860
K. Financial and insurance activities	50580	2329	1621	9852	102047	153335
L. Real estate activities	19856	9615	224	127380	220845	250092
M. Professional, scientific and technical activities	108067	154	3235	17895	56140	161126
N. Administrative and support service activities	72358	355	475	11438	19911	92149
O. Public administration and defense; compulsory social security	148944	129	0	68287	68287	217360
P. Education	138889	8	2796	33322	37093	173194
Q. Human health and social work activities	321709	30	3995	25302	42503	360247
R. Arts, entertainment and recreation	19335	27	1311	5412	12885	30936
S. Other services activities	23395	64	490	2593	10074	33043
T. Activities of households as employers	272	0	0	0	0	272
Total	1733247	32121	57891	650759	1457366	3164843

4.0.4 Please note that the distribution of B3 Mixed income by NACE - and thus also B2 Operating surplus proper by NACE - are available but are unpublished figures. Therefore, the NACE figures in the above table are the combined figures of B2 and B3 together.

4.1 The reference framework

4.1.1 The reference framework is primarily the **Generation of income account** and context of **the income approach** to estimating GDP. The generation of income account also has a definitive role in the framework of **institutional sector accounts**. This means that the main items of the income approach all have a breakdown by institutional sectors, in addition to breakdowns described in the paragraphs below. When presenting the sources used for the various components, the overall picture would suggest that all or mostly all declared economic activities are covered by **complete and up-to date** statistical sources.

4.1.2 **Compensation of employees** (D.1 in ESA 2010) has **two breakdowns**, one by categories or **components** and one by **kind of activities**. In practice, they are cross-classified, i.e., each of the components is broken down by kind of activities (industries). Both dimensions are described below in section 4.7. Compensation of employees has **two main components**, each of them broken further down into two items (sub-components):

Components of D1 Compensation of employees.

<i>Main components</i>	<i>Sub-components</i>
D.11 Wages and salaries	Wages and salaries in cash
	Wages and salaries in kind
D.12 Employers' social contributions	D.121 Employers' actual social contributions
	D.122 Employers' imputed social contributions

The source of compensation of employees (D1) for S13 (General government) is accounting statistics for central government and local government (KOSTRA), while for all other sectors, the main source is the *A-melding* (in Norwegian) which is **Register of jobs, remuneration, social benefits and taxes paid**.

4.1.3 **Other taxes on production (D.29)** consist of taxes - except taxes on products (which are described in chapter 3 above) - that resident producers incur, and that are payable to general government, as a result of engaging in production. These are taxes independent of the quantity or value of the goods and services produced or sold. There are **two breakdowns**, i.e., by **types** and by **kind of activities**. Some 100 detailed items of central government accounts (including nearly 20 items from other central government accounts) make up the types, treated and coded as other taxes on production. The breakdown by kind of activities is the one applied for all items from output down to operating surplus. **Borderline** between **taxes on products** and **other taxes on production** has been described in 3.28 above.

4.1.4 **Other subsidies on production (D.39)** consist of subsidies - except subsidies on products (which are described in chapter 3 above) - that resident producers may receive from general government, as a consequence of engaging in production. These are subsidies independent of the

quantity or value of the goods and services produced or sold. There are **two breakdowns**, i.e., by **types** and by **kind of activities**. Several hundreds of detailed items of central government accounts make up the types, treated and coded as other subsidies on production. **Borderline** between **subsidies on products** and **other subsidies on production** have been described in 3.30 above.

4.1.5 **Consumption of fixed capital (P.51c)** is defined as decline in the current value of the stock of fixed assets owned and used by producer during the course of the accounting period, as a result of physical deterioration, normal obsolescence or normal accidental damage. There are **two breakdowns**, i.e., by **type of fixed assets** and by **kind of activities**. Calculation of consumption of fixed capital applies to **net capital stock** - valued at written-down replacement cost, i.e., gross capital stock less cumulative consumption of fixed capital - and changes in this value.

4.1.6 Statistics Norway is also involved in estimating **gross capital stock** for the purpose of analyzing production functions and production capacity. This is beyond the scope of this inventory, however.

4.1.7 **Mixed income (B.3)** is a concept for the remuneration of labor and capital combined - related to production activities in the household sector, exclusively. The **balancing item** of the generation of income account in fact consists of two parts: operating surplus and mixed income. The **breakdown** is solely by **kind of activities**.

4.1.8 **Operating surplus (B.2)** is the balancing item of the generation of income account (of which for the household sector mixed income represents one segment of the former defined operating surplus, while income for owner-occupiers producing dwelling services still remains as operating surplus). It is the surplus accruing from processes of production before deducting any interest charges, rents or other property incomes payable on the financial assets, land or other tangible non-produced assets required to carry on the production. The **breakdown** is solely by **kind of activities**.

4.2 Borderline cases

4.2.1 Different types of allowances covering meals consumed when traveling on business, accommodation and transport expenditures etc., are divided between compensation of employees (employee part) and intermediate consumption (employer part). Due to difficulties in estimating the precise compensation part from the data, it has been decided to **allocate 25 per cent** of the total allowances as compensation of employees and **75 per cent** as intermediate consumption.

4.2.2. For a specific industry, net operating surplus is calculated as value added in basic prices, less compensation of employees, less other taxes on production (than taxes on products), plus other subsidies on production (than subsidies on products), less consumption of fixed capital. From such an estimation procedure, a range of possible **borderline problems** throughout the chain of main aggregates from output to net operating surplus - e.g., against intermediate consumption - has been encountered and thus looked into during the NA estimation process.

4.3 Valuation

4.3.1 In this context, valuation is particularly relevant for **other taxes on production** and **other subsidies on production** in the sense of **time of recording**. In general, the accruals basis principle of recording is applied in the NNA. Taxes on production and subsidies thus are **basically** recorded in **accruals values** and not as traditionally recorded in the government accounts, i.e., cash values. Pragmatically however, in a number of cases cash values are resorted to when applying the government accounts as sources. In particular, this is typical for other taxes and subsidies on production. Accruals basis is more commonly used for taxes and subsidies on products.

4.3.2 Valuation is also relevant in the case of **consumption of fixed capital** by applying the PIM method and making use of investment data and coherent price indices for investment when inflating constant-price figures in that respect. **Wages and salaries in kind** are considered taxable income in Norway. According to the tax-authorities, the valuation of the benefits when reporting to the *A-melding* is in purchaser prices (the type of price the employee faces when operating in the market).

4.4 Transition from private accounting and administrative concepts to ESA 2010 national accounts concepts

4.4.1 Two areas should be referred to here: the use of the *A-melding* in the compilation of compensation of employees (COE), and that of **accounting data of self-employed** for estimating mixed income. The detailed descriptions in sections 4.7 and 4.11 are referred to for more relevant information.

4.4.2 The main sources used for the compilation is the *A-melding* and the account statistics for general government. Another statistics used are Statistics Norway's statistics on sickness absentees. The statistics on sickness absentees have no role in determining the level of compensation of employees in any industry, but they have a role to play for identifying the composition of COE into its components. This is due to the fact that the central variable in the *A-melding* for wages and salaries in cash, with the name of 'lønn kontantlønn', is not completely harmonized with the concept in the NA. One difference is that wages paid according to collective agreements for executing job-termination is included in the variable, another more serious difference is that the variable includes wages paid for hours the employees are absent from work due to sickness, and the value of payment is high. Part of this payment is reimbursed later by the central welfare authorities, indicating that this part is not COE, while the part of absentee-hours financed by the employer (not reimbursed) should be classified as COE's imputed non-pension contribution. In this context the statistics for absentee due to sickness are being used. The methods used is described in 4.7.

4.4.3 **Accounting statistics of self-employed** as source was available for the first time in 1991 and 1992 as a means to evaluate a tax reform taken place in Norway from 1992. The source material is based on tax data in tax declarations and accounts (business as well as personal) submitted to the tax authorities. The data are thus influenced by tax rules and tax auditing practice.

4.5 The roles of direct and indirect estimation methods and benchmarks and extrapolations

4.5.1 **Direct methods** are mostly used, except that consumption of fixed capital is arrived at using the PIM method and operating surplus as a residual in most cases. **Indirect estimation methods** are also used partly for some components in compensation of employees when using different sources in combination (see section 4.7 for details).

4.5.2 As in the production approach, the role of benchmarks and extrapolations in the current NNA compilation is **quite limited** also in the income approach. The sources referred to are all annual sources, except for the *A-melding* which is updated each month as a register. As already mentioned, the notion of **benchmark and extrapolations** has an important role to play when undertaking a **main revision**, but it is restricted to this context and meaning.

4.6 The main approaches taken with respect to exhaustiveness

4.6.1 Two issues related to exhaustiveness should be mentioned at this point and with a reference to the income approach. One is related to **wages and salaries in kind (or income in kind)** - dealt with in chapter 7 in detail, the other is known as the confrontation between **theoretical and actual VAT receipts** - dealt with in chapter 3.29 in more detail. **Wages and salaries in kind** include *inter alia* services of company cars, reduced rates of interest, food and accommodation on business trips. Main source is the *A-melding*, an information source owned and controlled by the tax authorities, the central welfare administration (NAV), and Statistics Norway in cooperation.

4.6.2 Tips are not thought to be widespread in Norway. Earlier studies in the restaurants industry led to the conclusion that tipping could not be very extensive and in the 2002 main revision, some more investigation confirmed that no significant underestimation existed. Tips are taxable income and are due to be reported to the *A-melding*. Nowadays almost all payments for meal and drinks at restaurants and bars are made electronically in Norway, hence cash are seldom used. The device used for the electronic payment ensures that total payments are correctly split between tips and regular amount for the food and drinks ordered. The employers are responsible for reporting the tips registered (normally shared equally between employees) to the *A-melding*. See also chapter 7 on exhaustiveness.

4.6.3 The comparison of **theoretical and actual VAT receipts** gives a strong indication of the extent of exhaustiveness. Main results of this kind of check are a difference of 3.6 per cent on average for the period 2000 – 2012, and that of 3.5 percent for 2019, when using time lag adjusted government accounts figures. The small and positive differences show that more activities are covered than evidenced by the taxation authority. Statistics Norway believes that the size of these differences is reasonably well in their context as checks to ensure exhaustiveness. This result is quite encouraging, with two separate estimates being reasonably close and a difference between them being positive.

4.7 Compensation of employees

4.7.1 **Compensation of employees (COE)** has **two breakdowns**, one by **components** and one by **kind of activities**. The compilation is done on a detailed level of both industry and component, and the components in some cases can be further decomposed as described in ESA 2010 and in the following sections. A table illustrating COE broken down by industries and main components are presented below:

Compensation of employees and components. NOK million. 2019.

<i>NACE</i>	<i>W&S in cash</i>	<i>W&S in kind</i>	<i>Employers' actual social contributions</i>	<i>Employers' imputed social contributions</i>	<i>Compensation of employees</i>
A 01-03	13642	202	1922	262	16028
B 05-09	59008	3010	16265	2060	80343
C 10-33	125339	2811	26939	2900	157989
D 35	12066	242	3918	357	16583
E 36-39	9345	133	2170	305	11953
F 41-43	121495	3007	21583	2704	148789
G 45-47	144612	4329	27821	3106	179868
H 49-53	76092	1162	17253	742	95249
I 55-56	30491	293	4835	407	36026
J 58-63	68873	1499	15046	1596	87014
K 64-66	37672	1288	10672	948	50580
L 68	15896	538	3147	275	19856
M 69-75	86910	1930	17914	1313	108067
N 77-82	59547	1290	10023	1498	72358
O 84	111011	1362	34267	2304	148944
P 85	107424	568	27882	3015	138889
Q 86-88	244040	1308	68379	7982	321709
R 90-93	15526	220	3263	326	19335
S 94-96	18369	363	4333	330	23395
T 97	229	3	35	5	272
Total	1357587	25558	317667	32435	1733247

Sources, methods and exhaustiveness

4.7.2 Treatment and estimation of compensation of employees in the NNA is made in the framework of **Labor Accounts (LA)** established already 30 years ago. This framework and procedures therein cover both employment and compensation of employees. The central data source for the Labor Accounts, the *A-melding* which will be described more in depth below, covers remuneration but also the jobs/employees having earned the remuneration. By means of the Labor Accounts system, the number of resident employees according to the *A-melding* (each employee in the *A-melding* has a variable which identifies whether the employee is resident in Norway or not) is controlled according to the number of resident employees in the population-based statistics Labor Force Survey (LFS). In this way, the number of employees in the Labor Accounts and the estimates of compensation of employees are controlled and checked against the LFS-data, which ensures that compensation of employees cover at least all employees resident in the country. The information provided in the *A-melding* on employees' status of residence are used to estimate the compensation of employees to non-resident employees and are recorded in the relevant parts of the NA and BOP. For these transactions, see detailed description in chapter 8.

4.7.3 The main source for both the compilation of employees, number of fulltime equivalent jobs, hours worked, and compensation of employees in the Labor Accounts is the *A-melding*. The *A-melding* was established in 2015 and was soon adopted in Statistics Norway as the preferred source for statistics covering different aspects of the labor market. A more detailed description of the source is provided in chapter 10. The strength of this source is the great variety of transactions covered and the fact that each transaction is linked to a specified job. A job is defined and identified as the combination of the person holding the job and the enterprise offering the job, thus both the employee and the enterprise are identified for each job by use of the central register of population and of enterprises.

4.7.4 An enterprise is by law obliged to report to the *A-melding* the actual job if the job's total remuneration (in cash or in kind) paid during the year exceeds NOK 1000 (97 Euro). Hence, the low threshold is not considered to be a problem for exhaustiveness in the reporting.

4.7.5 The vast number of variables to be reported each month for each job (by means of enterprises' well adapted electronic system for handling information on its employees), the vital role the accuracy of the information reported has for the well-being of each employee, and the laws governing the reporting, all underpin the quality and applicability of this data source.

4.7.6 The enterprises are allowed to correct their reports in case of inaccuracies in their original reporting. A number of controls are also undertaken by algorithms when receiving the data. If central information are not provided correctly, the submission is not accepted and the enterprise will have to correct and submit once more. The data used for the compilation of the NA has been subject to control by the tax-authorities, by the employees which are encouraged to control the information provided by their employer and partly also by the central welfare administration (NAV).

4.7.7 In our view, the system for reporting, the transparency of all relevant data, and all instances involved in controlling and using the information reported, make us believe that underreporting of employees' remuneration and tax evasion is not considered a problem, and data are hence not adjusted for in the compilation of compensation of employees.

4.7.8 Statistics Norway stores all information reported to the *A-melding*. The data provided are sorted and aggregated to variables which are useful for Statistics Norway in the production of statistics covering the labor market and for the national accounts.

Methods used for the compilation of COE and its components

4.7.9 The methods and sources used are the same for all industries (and sectors) regarding wages and salaries (in cash and in kind) and actual social contributions. The same applies for imputed non-pension contributions. However, there are differences in methods and sources used for the estimation of imputed pension contributions for different sectors. In the elaboration below all different methods and data sources across industries/sectors and components are presented.

4.7.10 The starting point is the data observations in the *A-melding*. At first each job which has existed at least one month during the year is identified. For each identified job all variables used in the compilation of compensation of employees are summed up over the 12 months of the year to find the annual total. Having the variables of the jobs in *A-melding* summed up for the relevant year, the jobs and the jobs remuneration are sorted and aggregated to form data for NACE-industries for each sector. Wages and salaries paid to employees having left the enterprise as part of an agreement regulating job-termination constitute a single variable in the *A-melding* ('Lonn_sluttvederlag'), and this variable is directly classified as part of D1222 (imputed non-pension social contribution). Due to the fact that also

other elements of the *A-melding* contribute to D1222, we denote this part related to payments for leaving the enterprise as D1222 (compensation for job-termination):

D1222 (compensation for job-termination) = $\text{Lonn_sluttvederlag}$.

4.7.11 One of the most central variables in the *A-melding* is named by 'lonn_kontantlonn'. The variable covers wages and salaries in cash paid by the employer according to the definition of wages and salaries in the *A-melding*. Employers' payments of taxes and other payments done on behalf of the employee, like employees' contribution to pension schemes etc. are included. This is also the case for tips offered by the enterprises' customers. Tips are identified in the electronic payments and are due to be reported as part of wages in cash paid to the employees. The variable 'lonn_kontantlonn' is not fully in accordance with the concept in the NA due to the fact that it includes both wages and salaries paid for the periods for which the employees have been sick and absent from work, and wages paid to employees for having left the enterprise (payment for job termination). The employers' payment to employees absent from work due to sickness reflects employers' role in the Norwegian system for providing support for employees absent from work due to sickness. In Norway the employers keep on paying wages while the worker is absent from work but will later be reimbursed by the central welfare authority (NAV) with the payment done for the 17th and later days of continuous courses of sickness absentees. The payment done for the first 16 days will however not be reimbursed. This payment is regarded as the employers' share of the cost and is recorded as imputed non-pension social cost in compensation of employees (together with remuneration for leaving the job). The employee himself will not lose any income due to the absence caused by sickness.

4.7.12 For estimating wages and salaries in cash, all wages paid for hours lost due to sickness absentees as well as wages and salaries paid for leaving the enterprise must be taken into consideration. We start by defining the NA estimate of the agreed upon wages and salaries in cash, A, as

$A = \text{lonn_kontantlonn} - \text{lonn_sluttvederlag}$,

which is nothing else than total wages and salaries according to the *A-melding* subtracted by the wages and salaries for those leaving the enterprise.

B – wages and salaries paid for agreed upon hours of work lost (not realized) due to sickness absentee is then calculated as:

$B = 0.8 * r * A$,

where r is the rate of absence of agreed upon hours of work due to sickness according to Statistics Norway's statistics on sickness absence for the industry and sector for which the job belongs to. The parameter 0.8 reflects the ratio between the level of wages and salaries per fulltime equivalent job for jobs belonging to the employees absent from work and the wage-level of all jobs. The parameter is less than one according to statistics, showing somewhat lower wages for employees absent from work due to sickness than the average wage-level.

Wages and salaries in cash in the NA is then defined as A less B, i.e.,

Wages and salaries in cash = $A - B$.

4.7.13 As mentioned, the welfare authorities reimburse employers payment of wages from day 17 of continuous absentees from work due to sickness. This reimbursement is covered in the *A-melding* as a part of the basis for the estimation of pension contribution to the social security ('*Arbeidsgiveravgift*') the employer is due to pay. Let this reimbursement be called R. Then employers imputed non-pension contribution due to sickness as part of D1222, called D1222 (sickness absentee) can be stated as:

D1222 (sickness absentee) = B – R,

Then the total value for imputed non-pension social contribution D1222 is the sum of the two parts:

D1222 = D1222 (compensation for job termination) + D1222 (sickness absentee).

4.7.14 The *A-melding* has a variable for wages and salaries in kind ('lonn_naturalytelse'). This is the remuneration in kind reported to the *A-melding*. Remuneration in kind earned in jobs are by law due to be reported by the employer to the *A-melding*. The actual benefits due to be reported represent a sound estimate of the price to be paid if the service or good were to be bought on the market. If however the employee has paid a share of the goods and services by own resources, this own payment is subtracted, in line with the fact that wages and salaries in kind should represent net benefit in such cases.

4.7.15 The *A-melding* also has an aggregated variable for allowances ('lonn_utgiftsgodtgj'). The allowances are meant to cover the value of goods and services used in the production process (intermediate consumption), which the employee has paid for in the first instance, but we have reasons to believe that the allowances also include elements of over-compensation, with the allowances being slightly higher than the employees' outlay. The exact degree of over-compensation is difficult to find evidence for. We have ended up deciding that 25 per cent of the allowance according to the *A-melding* is a remuneration to the employees, thus part of compensation of employees. Thus we now have,

Wages and salaries in kind = lonn_naturalytelse + 0.25*lonn_utgiftsgodtgj.

Thus wages and salaries in cash and in kind (D11) is the sum of the two components,

D11= Wages and salaries in cash + Wages and salaries in kind.

4.7.16 **Employers' actual contributions to National Insurance** are specified separately as part of actual pension contributions due to its major role in this context. National Insurance - as the most important social security scheme in Norway - covers old age pensions, disability pensions and other types of social benefits. Because a large part of the National Insurance expenses is related to payments of pensions, the employers' obliged contribution to the National insurance, called '*Arbeidsgiveravgift*' in Norwegian, is treated as a part of employers' actual pension contribution, D1211. The data for its estimation is again found in the *A-melding*. The *A-melding* provides the employers' reported values for three parts which together form the basis for the contribution with the relevant rates dependent on the enterprise localization in Norway.

The three parts are (name of variable in the *A-melding* in parenthesis):

- a) Wages and salaries in cash and in kind (grl_loenn)
- b) Pension contributions (grl_pensjon)
- c) Reimbursements from the welfare authority (NAV) for wages paid from day 17 on continuous sickness absentees (grl_refusjon).

It should be noted that not all wages and salaries in cash and in kind are subject to duty of paying contribution to the National insurance, but the share is large, not far from 100 percent. For pension contributions (b) the share is also high. The reimbursements (c) is, as mentioned, used in the estimation of wages and salaries in cash.

The three parts which form the basis are multiplied with the share for the actual localization, the share is also provided in the *A-melding*.

$Arbeidsgiveravgift = r * (a + b - c).$

By denoting actual contribution to the National insurance D1211 (National insurance), we have

$D1211(\text{National insurance}) = \text{Sum of } D1211 (\text{National insurance}) \text{ over all enterprises.}$

4.7.17 In addition to the pension contribution subject of pay of contribution to the National insurance b), the variable in the *A-melding* ('lonn_fors_skatt') covers both pension contribution not subject to pay contribution to the National insurance and other social non-pension contributions. Non-pension contributions typically covered is insurance of death or injury, insurance for loss of license etc. We have assumed that 70 per cent of the value of 'lonn_fors_skatt' is related to pension schemes, the rest 30 per cent related to non-pension contributions. D1211 is thus calculated as:

$D1211 = D1211 (\text{National insurance}) + \text{grl_pensjon} + 0.7 * \text{lonn_fors_skatt}.$

The actual non pension social contribution D1212 is the part of lonn_fors_skatt assumed not paid to pension schemes:

$D1212 = 0.3 * \text{lonn_fors_skatt}$

4.7.18 For employers' imputed pension contributions, the methods for compilation and data sources vary among the sectors. One method is applied for general government (S13), one for non-financial, financial, and the household sectors (S11+S12+S14), and finally another one for NPISH's sector (S15).

4.7.19 The method used for the 3 sectors (S11, S12, S14) is as following. A large share of the enterprises in these sectors has chosen to become members of a pension scheme called '*Fellesordningen for AFP (avtalefestet pensjon) i privat sektor*' (in Norwegian). The scheme was established in 1988 as a result of wage-negotiations between the central labour unions and the central organizations for the employers. In addition to the main organizations representing the employees (LO), and NHO (representing the employers), the government also had a central role. The government agreed to pay one third of the total costs of the pension scheme (pension cost included), while the rest was to be financed by the employers. Over the years, the number of enterprises affiliated with the scheme has grown steadily, and probably has the conditions for employees in these enterprises being eligible to draw pension benefits from this scheme become less strict. The system for financing the scheme has not changed since its origin in 1988. While the enterprises' actual contributions to the scheme (*AFP-ordningen*) are due for payment of *Arbeidsgiveravgift* and hence covered in the variable *grl_pensjon*, our source for actual pension contribution does not cover the part paid by central government directly to the scheme. The right of employees to receive pension benefits from this scheme is based on work done in these enterprises. The enterprises' contributions to this pension scheme are less than the employees' earned benefit by the employment plus the due part of the costs for operating the scheme, reflecting the fact that the government contributes about a third of the cost. The central government's contribution to the scheme is recorded as social imputed pension contributions (D1221) for the enterprises which are part of this pension scheme. The value of the support (D1221) is at the same time classified as other subsidies on production (D39). The government contribution to the scheme, the total of D1221 for these sectors, are found in the central government accounts. Since there are no sources for each enterprise's contribution to this pension scheme, we have assumed that the central government's contribution reflects total wages and salaries in cash in each enterprise within the 3 sectors.

Therefore, for S11, S12, S14, we have:

$D1221 (\text{imputed pension contribution}) = \text{Central governments contribution to the AFP-scheme.}$

4.7.20 For the **general government sector (S13)**, imputed pension contributions are compiled by use of both the *A-melding* and the accounting statistics for central and local government. The pension schemes for governments' employees are in general defined benefit schemes, with the benefits determined by the rules of the scheme. The two central providers of pension schemes for government employees are *Statens pensjonskasse* and *Kommunal Landspensjonskasse*. *Statens pensjonskasse* is the main provider of pension schemes to employees in the central government. This pension scheme is unfunded and financed on a pay-as-you-go basis. *Kommunal Landspensjonskasse* provides pension schemes to employees first and foremost in local government but also to employees in the central government working for the state-owned hospitals. Even though the pension schemes offered by the two providers seem quite similar for the employees, they are financed differently. The schemes provided by *Kommunal Landspensjonskasse* are funded, while the schemes provided by *Statens pensjonskasse* are, as mentioned, not funded.

The method used in the NA is the same for each industry within the central and local government. Total compensation of employees is given by the government account statistics. The components of COE except for imputed pension contributions (D1221) are estimated by use of the *A-melding*, as previously described. Hence, D1221 is estimated as the residual.

Thus, for S13, General government, we have:

$$D1221 = \text{COE (D1)} - D11 - D1222.$$

The central question is of course how D1 has been compiled in the source statistics and especially for the imputed pension contribution. The pension cost and the components needed to derive imputed pension contribution are provided to Statistics Norway by *Statens pensjonskasse* and *Kommunal Landspensjonskasse* and are taken into account in the production of the account statistics for the central and government accounts. As far as we know, the actuarial methods used by the two pension providers seem to be fairly in accordance with the methods presented in the Eurostat handbook 'Technical Compilation Guide for Pension Data in National Accounts'.

4.7.21 For NPISH (S15) sector, we for the time being don't have sources which are fully applicable for the calculation of D1221. Consequently, D1221 is set equal to zero for the industries in this sector. However, in our opinion, the laws which the pension providers are due to follow, are quite strict when it comes to ensuring sufficient reserves behind the pension obligations. This has also consequences for the compilation of the premiums to be paid, they are due to be sound, with the premiums reflecting the true cost for the employer.

4.8 Other taxes on production and imports

4.8.1 In the NNA, other taxes on production and imports consist of **taxes on production and imports other than taxes on products**, which are described above in Chapter 3 (sections 3.28 and 3.29). According to ESA 2010, other taxes on production include one single item, defined as taxes that enterprises incur as a result of engaging in production, independently of the quantity or value of the goods and services produced or sold. It should be underlined that rules and procedures exist to ensure that for each tax a correct and consistent classification is made (see also section 3.21 above on how items of central government accounts and local government accounts are tabled with a whole set of information).

D 29 Other taxes on production

4.8.2 **Borderline cases** between taxes on products and other taxes on production have been described in section 3.28 above.

4.8.3 In the NNA, other taxes on production amounted to NOK 32.1 billion in 2019. Its **share of GDP is 0.9 per cent**. Virtually the whole amount of other taxes on production is related to market activities, while there is only an insignificant amount from non-market production of government and NPISHs.

4.8.4 **Main sources used** are:

- Central government accounts (the fiscal accounts)
- Other central government accounts (government funds etc.)
- Local government accounts

4.8.5 **Central and local government accounts**, including **other central government accounts**, are used to estimate other taxes on production. About **49 per cent** of the total amount is allocated as income to central government. The **remaining 51 per cent** is income for local government, estimated from **local government accounting data**.

4.8.6 In terms of **valuation** and time of recording, all items are **actual receipts** as recorded in the central and local government accounts. It means that timing adjustments made to tax receipts are not carried out for other taxes on production. It may also be added that adjustments are not made to take account of tax amounts unlikely to be collected.

4.8.7 Some **100 detailed items of central government accounts** (including nearly 20 items from other central government accounts) are treated and coded as other taxes on production. **Larger items** - above NOK 1 billion threshold - are listed and illustrated by 2019 figures below. The source reference is given, with an indication of the allocation made to relevant industries in each case.

Tax on CO2 emission in the petroleum sector	
2019 value	NOK 5.5 billion
Source	Items of central government accounts
Paying industry	060 Extraction of crude oil and natural gas

Imputed tax on emission permits	
2019 value	NOK 2.3 billion
Source	Items of other central government accounts (government funds etc) ASTR
Paying industry	EU-ETS industries

Financial activity tax	
2019 value	NOK 2.0 billion
Source	Items of central government accounts
Paying industry	section K - Financial and insurance activities

Road traffic insurance tax (Annual motor vehicle tax paid by enterprises)	
2019 value	NOK 1.6 billion
Source	Items of central government accounts
Paying industry	All industries
Re-registration tax on motor vehicles	
2019 value	NOK 1.3 billion
Source	Items of central government accounts
Paying industry	450 Sale of motor vehicles

4.8.8 Other taxes on production as income for **local government** amount to NOK 16.4 billion in 2019 and have been confined to three items of local government accounts. One item is related to electricity production and consists of concession taxes, while the **largest item** is **tax on real property**. The tax on real property is particularly levied for urban areas, and for electricity and other energy intensive plants. It is therefore assumed that the NNA-industry 688 Dwelling service production of owner-occupiers is a main payment industry, along with the electricity industry and other energy intensive manufacturing industries.

4.9 Other subsidies on production

4.9.1 In the NNA, other subsidies on production consist of **subsidies other than subsidies on products**, which are described above in Chapter 3 (section 3.30). According to ESA 2010, other subsidies on production include one single item (D 39), defined as unrequited payments from general government (or the Institutions of the European Union) which resident producer units receive as a consequence of engaging in production and which are not linked to the quantity or value of the goods and services produced or sold. It should be underlined that rules and procedures exist to ensure that all subsidies on production are estimated and consistent classification is made (see text in section 3.21).

D 39 Other subsidies on production

4.9.2 **Borderline cases** between subsidies on products and other subsidies on production have been described in section 3.30 above, as regards the agricultural subsidies in particular. Other borderline

problems dealt with concern the distinction between subsidies and government final consumption expenditure, the current versus capital distinction exemplified by subsidies vs. investment grants, and the treatment of persistent loss. Some of these issues and the NNA treatment are touched upon below when illustrating the larger items of other subsidies on production.

4.9.3 In the NNA, other subsidies on production amounted to NOK 57.9 billion in 2019. Its **share of GDP is 1.6 per cent**.

4.9.4 Other subsidies on production are distributed to various NNA-industries of market producers only. Other subsidies on production are not allocated to non-market industries in the NNA.

4.9.5 **Main sources used** are:

- Central government accounts (the fiscal accounts)
- Other central government accounts (government funds etc.)
- Local government accounts

4.9.6 **Central government accounts**, including **other central government accounts**, are used to estimate most other subsidies on production since approximately **83 per cent** of the total amount is paid by central government, while around **17 per cent** is paid by local government, estimated from **local government accounting data**.

4.9.7 In terms of **valuation** and time of recording, all items are **actual outlays** as recorded in the central and local government accounts.

4.9.8 Almost **500 detailed items of central government accounts** are treated and coded as other subsidies on production. **Larger items** are listed and illustrated by 2019 figures below. The source reference is given, with an indication of the allocation made to relevant industries in each case.

Grants according to Agreement for Agriculture	
2019 value	NOK 12.0 billion
Source	Item 1150/70,73,74,77,78 of central government accounts
Receiving industries	Agriculture and wholesale trade

Government measures to promote employment	
2019 value	NOK 6.1 billion
Source	Item 0634/76 of central government accounts
Receiving industries	Distributed to 20 industries within manufacturing, construction, trade, hotels and restaurants, education and social work.

Transfers to traffic part of the Railway Directorate (former State Railway Corporation)	
2019 value	NOK 4.0 billion
Source	Item 1352/70 of central government accounts
Receiving industry	491 Transport via railways

Special employment measures for sailors	
2019 value	NOK 1.8 billion.
Source	Item 0909/ 73 of central government accounts
Receiving industries	502 Passenger sea transport

4.9.9 Other subsidies on production and imports included in 2019 among others, grants to **named financial institution**, grants to **transportation** including Hurtigruta- the largest coastal liner company in Norway, grants to **promote environmental improvements**, **grants to promote cultural activities** - including film activities, grants to **education and research**, to **health activities**, and **production grants to publishers of newspapers**.

4.9.10 In addition (but included in the total for central government), central government pays out **subsidies from government funds** etc., which are estimated from some 100 recordings of other central government accounts.

4.9.11 Other subsidies on production paid by **local government** amount to NOK 10.0 billion in 2019. Some 60 items involve other subsidies on production as recorded in local government accounts. The largest items were **transport grants** to scheduled motor bus transport, to tramway and suburban transport, and to the dwelling service production industry as payments for housing and community amenity purposes.

4.10 Gross operating surplus

4.10.1 In the NNA, **operating surplus** is estimated as a **balancing item**. Operating surplus is the balancing item of the generation of income account and can be expressed either in gross or in net terms. Operating surplus is **net** in the NNA compilation framework. Accordingly, consumption of fixed capital is described separately below in section 4.12. It should be added that in the context of statistical sources, sometimes direct information on operating surplus might be approached and mostly in gross terms. Nevertheless - in the current scenario - operating surplus is derived conceptually in the NA system and thus does not provide independent estimate (neither in a particular industry nor for total industries).

4.10.2 Total operating surplus is **calculated as** GDP, less compensation of employees, less taxes on production plus subsidies on production, and less consumption of fixed capital. For a particular industry, operating surplus is calculated as value added in basic prices, less compensation of employees, less other taxes on production (than taxes on products), plus other subsidies on production (than subsidies on products), less consumption of fixed capital. From such an estimation procedure - giving the fact that all other concepts involved in the chain of estimation have been described already - there is no further need for describing sources and methods at this juncture. By the same token, it should be emphasized that **comprehensive estimates** of operating surplus are made - at same detailed activity breakdown as for output, intermediate consumption, value added etc. Furthermore, a range of

possible **borderline problems** throughout the chain of main aggregates from output to operating surplus - e.g., against intermediate consumption - has been encountered and looked into during the NA estimation process.

4.10.3 In the NNA, operating surplus (net) is estimated at NOK 807 billion in 2019. Its **share of GDP is 22.6 per cent**. It may be added that operating surplus in oil and gas extraction and related services accounted for about one third of the total operating surplus in 2019, or 7.2 per cent of GDP.

4.11 Mixed income

4.11.1 According to the **ESA 2010** adopted in the NNA system, operating surplus in this respect is actually to be termed in two parts, i.e., **operating surplus** (proper) and **mixed income**. In fact, the correct use of these terms is not operating surplus for the total, but for the segment that is not covered by mixed income.

4.11.2 **Mixed income** is the term for that particular segment of the balancing item of the generation of income account that is **received by the household sector**. The reason for this is the problem of distinguishing between remuneration for labor and for capital in the household sector, hence the expression mixed income. In the case of income for owner-occupiers producing dwelling services, it is not appropriate to use the mixed income term as only the capital production factor is involved. Therefore, in the dwelling services production, the balancing item of income to owner-occupiers of the household sector should still be called operating surplus. Moreover, mixed income is not generated in other sectors than the household sector.

4.11.3 Regarding the household sector, the compilation of production and generation of income accounts was a **new feature** when introduced in the NNA in the 1995 revision. It was linked to the improved source situation that came about through **accounting statistics of self-employed** as a means to evaluate a tax reform taken place in Norway from 1992. This source is described in section 10.0.2 below (source no.5). From 2003 **all self-employed** who delivered data electronically were included in the data (almost 100 000 self-employed in 2003). Previously, data was collected for a sample of 5 000 self-employees. From 2009 self-employed persons with operating income under NOK 50 000 are exempt from reporting income statement. Specific adjustment for tax evasion is not made. Calibration methods are used to avoid biased data and thus providing comprehensive results (conceptually before deducting interest and rent paid on assets owned by others or interest and rent received on assets owned) and links to tax register and population census. Time recording differences are not of much relevance with this type of data.

4.11.4 In the NNA, **mixed income** (mixed income and operating surplus proper) in the household sector is estimated at NOK 265.7 billion in 2019. Its **share of GDP is 7.5 per cent**.

4.11.5 In the NNA, a **direct approach** has been taken for the estimation of **gross mixed income**, utilizing the new source of accounting statistics of self-employed. This approach means that the following five steps are envisaged:

- (1) **Balancing item** gross operating surplus / gross mixed income is arrived at through the production and income generation accounts of the **total economy**, obtained from the detailed Norwegian approach described throughout chapters 3 and 4.
- (2) **Gross operating surplus of owner-occupiers** from producing dwelling services is obtained as a balancing item, in particular influenced by the output and intermediate consumption estimates.
- (3) **Gross mixed income** is estimated from the accounting statistics of self-employed.
- (4) **Gross operating surplus including gross mixed income of the household sector** is obtained from the sum of (2) and (3).
- (5) **Gross operating surplus of other sectors** are arrived at as a balancing item by deducting (4) from (1).

4.11.6 The utilization and **transformation of the accounting statistics for the gross mixed income estimation** may be described in terms of two phases. These are described in section 4.4 above.

4.11.7 Specifically, strong emphasis has been put in achieving a consistent solution to **the farming part**, i.e., finding a consistent solution for the farming sub-sector vis-à-vis the NNA industry estimates for agriculture. In terms of output and intermediate consumption, farming or agriculture accounts for approximately **one-fourth of the household sub-sector for self-employed**. Valuation of output and intermediate consumption is imperative for the treatment of agricultural subsidies in finding an overall and consistent solution in this area. For other industries than agriculture, the confrontation between the NNA industry estimates and accounting data for the self-employed has been made in a more summarized way. Thus, adjustments to the accounting data are few for the non-farming part.

4.12 Consumption of fixed capital

4.12.1 Estimates of consumption of fixed capital are illustrated below for the year 2019 broken down by main industries, by market/non-market producers and by some main categories of fixed assets.

Consumption of fixed capital. NOK billion. 2019

BY INDUSTRY		
NACE		NOK billion
A	Agriculture, forestry and fishing	16.6
B	Mining and quarrying	149.8
C	Manufacturing	43.9
D	Electricity, gas, steam and air conditioning supply	20.5
E	Water supply; sewerage, waste management and remediation activities	9.2
F	Construction	16.7
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	21.8
H	Transportation and storage	37.1
I	Accommodation and food service activities	3.8
J	Information and communication	29.8
K	Financial and insurance activities	9.9
L	Real estate activities	127.4
M	Professional, scientific and technical activities	17.9
N	Administrative and support service activities	11.4
O	Public administration and defence; compulsory social security	68.3
P	Education	33.3
Q	Human health and social work activities	25.3
R	Arts, entertainment and recreation	5.4
S	Other service activities	2.6
	TOTAL	650.8

BY INSTITUTIONAL SECTOR	
Non-financial enterprise	388.9
Financial enterprises	9.9
General government	129.8
Central government	77.1
Civilian central government	61.9
Defence	15.1
Local government	52.8
Households	115.9
NPISHs	6.2
TOTAL	650.8
BY MARKET TYPE	
Market producers	415.5
Non-market producers	235.3
TOTAL	650.8

BY ASSET TYPE	
Intellectual property products, except oil exploration	125.5
Buildings and constructions	253.3
Oil exploration, drilling, pipelines for oil and gas	51.6
Oil platforms etc.	63.2
Ships and boats	20.8
Other transport equipment	25.6
Machinery and equipment	110.7
TOTAL	650.8

4.12.2 The consumption of fixed capital and the net capital stock of fixed assets are calculated with the **Perpetual Inventory Method (PIM)**. The model uses the standard breakdowns for industries and types of assets in the NNA, with around **150 industries and about 50 asset types**. The industry breakdown includes a split between the main institutional sectors. Per convention, cultivated assets and valuables are not depreciated.

4.12.3 Geometric depreciation functions are used for all asset types in the PIM. The depreciation rates (d) have been derived from estimates of average service lives (L) using the double declining balance assumption, $d=2/L$. The service life estimates are based on own studies and information from countries that are comparable with Norway in terms of economy, technology and climate, such as Canada, Germany and Sweden. **In 2014**, Statistics Norway made a **study on service lives** and depreciation, based on a sample survey among domestic enterprises, see <http://www.ssb.no/nasjonalgrenskap-og-konjunkturer/artikler-og-publikasjoner/levetid-og-verdifall-pa-varige-driftsmidler>. The results from

the survey were used to update the depreciation rates in the PIM. Revised time series were published in 2015.

4.12.4 The time series for consumption of fixed capital and capital stock have been revised back to 2004. To avoid a break in the time series, the new depreciation rates are applied to capital stock built up from 2004, while the old rates are still used on capital that existed in 2003. The rates for government and non-profit institutions serving households have not been changed in order to avoid revisions in production and consumption. The changes in depreciation rates resulted in an overall increase in capital consumption in 2012 of approximately NOK 11 billion, or 2.5 percentage points. The capital stock was reduced by approximately 0.5 percentage points in the same year.

4.12.5 Average depreciation rates and service lives currently used in the NNA are shown below for 14 aggregated types of assets. In some cases, they are differentiated by industries.

Average service lives by types of fixed assets.

<i>Asset type</i>	<i>Depreciation rate</i>	<i>Service life (years)</i>
Buildings	0.029	69
Railroads	0.039	51
Roads	0.033	60
Oil platforms, drilling, pipelines	0.083	24
Other constructions	0.043	47
Ships	0.097	21
Aircraft	0.100	20
Cars, trucks, buses	0.223	9
Machinery and equipment - <i>Of which weapon systems</i>	0.130 <i>0.100</i>	15 20
Computers, etc.	0.443	5
Software	0.501	4
Oil exploration	0.101	20
R&D	0.199	10
Originals	0.500	4
Total	0.051	39

4.12.6 The current version of the PIM model was first set up in 1997, during the ESA95 main revision. The model is based on long time series of GFCF. In the NA database, the GFCF series start in 1970, but for the purpose of the PIM, they were extrapolated backwards based on historical NA data. Some adjustments have been made during the subsequent main revisions.

4.12.7 The following table presents consumption of fixed capital and capital stock figures for general government. In total 20 different types of capital are identified. Non-residential buildings constitute the largest value, followed by Roads and bridges, and then by Other constructions, in terms of either capital stock or consumption of fixed capital in 2019

General government. Consumption of fixed capital and capital stock. NOK billion. 2019

<i>Type of asset</i>	<i>Consumption of fixed capital</i>	<i>Capital stock</i>	<i>Used in</i>
008100 Residential buildings	0.5	21.1	Central government
008200 Non-residential buildings	28.1	877.8	Central and local government
008300 Land improvement	0.0	0.0	Central government
008310 Railroads	4.8	129.8	Central government
008320 Power lines	0.0	0.0	Central government
008330 Power plants	0.0	0.0	Central government
008340 Roads and bridges	22.8	700.6	Central and local government
008350 Other constructions	9.7	299.9	Central and local government
008410 Ships and boats	2.0	25.3	Central government
008420 Aircraft	2.8	34.8	Central government
008430 Cars	0.4	2.0	Central government
008440 Buses	0.0	0.0	Central government
008450 Trucks	1.7	9.0	Central and local government
008550 Machinery and equipment	5.2	39.9	Central and local government
008560 Computers, office machines	9.2	21.6	Central and local government
008570 Telecommunication equipment	0.0	0.1	Central government
008590 Weapons and weapon systems	6.7	69.4	Central government
008720 Research and Development (R&D)	1.3	6.6	Central government
008740 IT-software	7.4	16.7	Central and local government
008990 Valuables	0.0	0.0	Central government

4.13 Conclusions

4.13.1 A variety of methods are applied in the income approach, reflecting different types of main aggregates, some of which mostly use statistical sources (mixed income), others use administrative sources (compensation of employees, other taxes on production, other subsidies on production), another is mostly based on model estimations (consumption of fixed capital), and finally, one main aggregate is determined residually (operating surplus).

4.13.2 Strength and suitability of the methods applied are considered to be on the positive side in general, and for various reasons: **(1) Compensation of employees** is estimated within the **integrated framework of labor accounts (LA)** and coupled with employment estimates, and LA is seen as a close satellite account to the NA, **(2) Sources and methods for compensation of employees** are continuously being evaluated for improvements following a detailed approach by activities and the LA framework, **(3) Detailed government accounts and coding procedures** mean that these administrative sources are utilized in a best possible and detailed way, **(4) Long-established model developed for calculating consumption of fixed capital** and fixed assets stock, to which updating and refining procedures are carried out in benchmarking and main revision undertakings, is probably

most important, **(5) Accounting data are used more thoroughly** than before and thus providing a closer link between the income approach - also the institutional accounts - and the production and expenditure approaches, and in terms of this link, the accounting data are the most important. **(6) Annual SUT framework has been used in the NNA and the FNA over several decades** to ensure close integration between the three general methods of GDP estimation (the production and expenditure approaches aligned with the income approach).

CHAPTER 5 THE EXPENDITURE APPROACH

5.0 GDP according to the expenditure approach

5.0.1 The table that follows summarizes information according to the expenditure approach for 2019 by main categories of final use of GDP.

Main categories of final use. NOK billion. 2019

	<i>Billion NOK</i>	<i>Per cent of GDP</i>
Total final consumption expenditure	2446.8	68.7
Household final consumption expenditure	1493.6	41.9
NPISH final consumption expenditure	85.5	2.4
Government final consumption expenditure	867.7	24.3
Gross capital formation	1063.9	29.9
Gross fixed capital formation	957.8	26.9
Changes in inventories	105.7	3.0
Acquisitions less disposals of valuables	0.4	0.0
Exports of goods and services	1292.2	36.3
-Imports of goods and services	1239.4	34.8
Gross domestic product GDP	3563.5	100.0

5.1 The reference framework

5.1.1 The reference framework is primarily the **Use of income account** (Final consumption expenditure), **Capital account** (Gross capital formation), **Rest of the world account** (exports and imports), and the context of **expenditure approach** to estimate GDP. The references to the accounts cited above imply a definitive role played by these accounts in the framework of **institutional sector accounts**. This means that the main items of the expenditure approach all have a breakdown by institutional sectors, in addition to the breakdowns described for the central framework in the paragraphs to follow.

5.1.2 **Final consumption expenditure (P.3 in ESA 2010)** has **two breakdowns**, one by **categories of use** and the other by **products**. In practice, they are cross-classified, i.e., each of the categories of

use is broken down by products. Both dimensions are described below in sections 5.7- 5.9. **Final consumption expenditure** has **two main components**:

P.3	Final consumption expenditure
P.31	Individual consumption expenditure
P.32	Collective consumption expenditure

These categories serve as a framework for user categories of three different institutional sectors: **household final consumption expenditure, final consumption expenditure of NPISHs and government final consumption expenditure**. The first two belong to P.31, while the third partly belongs to P.31 and partly to P.32. This opens up for the alternative framework on final consumption, i.e., **Actual final consumption (P.4 in ESA 2010)**:

P.4	Actual final consumption
P.41	Actual individual consumption
P.42	Actual collective consumption

5.1.3 In the NNA, both main frameworks of final consumption are taken into account. Still, **final consumption expenditure** clearly has the **main attention**, while actual final consumption merely plays a supplementary role. Breakdowns are detailed in most respects, by P.3 user categories and by the NNA-products, implicitly also by P.4 user categories, although exposed at aggregated level only in the case of actual final consumption.

5.1.4 **Gross capital formation** (P.5 in ESA 2010) has **three main breakdowns**, one by **categories of use**, one by **kind of economic activities** (for gross fixed capital formation), and another one by **products**. In practice, they are arranged in pairs of cross-classifications. All dimensions are described in sections 5.10-5.12. **Gross capital formation (GCF)** has **three main components or categories of use**:

P.5	Gross capital formation
P.51g	Gross fixed capital formation
P.52	Changes in inventories
P.53	Acquisitions less disposal of valuables

5.1.5 In the NNA, this GCF framework has been adopted, although the last main item on valuables plays a negligible role so far. **Breakdowns** are otherwise **detailed in most respects**, by P.51g user categories (types of fixed assets), by kind of activities (industries) and by the NNA-products, and furthermore, by P.52 user categories (less detailed), and the NNA-products here as well. Gross fixed

capital formation by industries has attracted more attention from the users in Norway than that by the alternative breakdown, i.e., by types of fixed assets.

5.1.6 Exports of goods and services (P.6 in ESA 2010) and **Imports of goods and services** (P.7 in ESA 2010) both have two breakdowns, one by **categories of use** and the other by **products**. In practice, they are cross-classified, i.e., each of the user categories are broken down by products. They are described in sections 5.13 - 5.16 below. Exports and imports have two main components or user categories within each of them:

P.6	Exports of goods and services
P.61	Exports of goods
P.62	Exports of services
P.7	Imports of goods and services
P.71	Imports of goods
P.72	Imports of services

5.1.7 In the NNA, this framework of exports and imports has been adopted, with additional emphasis on aspects of oil and gas extraction in the North Sea and its profound impact on exports from Norway. **Breakdown on the NNA-products is detailed**, while the breakdowns on user categories (components of exports and imports) are relatively limited. It should be added that exports and imports are treated in a harmonized way in the NNA and in the Norwegian Balance of Payments.

5.1.8 The following table lists the main statistical sources for each expenditure component of GDP. All sources, if not otherwise stated, have an annual (or quarterly) frequency.

Main statistical sources by expenditure component and domestic sector.

<i>Institutional sector</i>	<i>Final consumption</i>	<i>Gross capital formation</i>	<i>Exports</i>	<i>Imports</i>
<i>S.11 Non-financial enterprises</i>		- Accounting based statistics - Building statistics - SUT balancing	- External trade in goods statistics - External trade in services statistics	- External trade in goods statistics - External trade in services statistics
<i>S.12 Financial enterprises</i>		- Accounting based credit market census - Building statistics - SUT balancing	- External trade in goods statistics - External trade in services statistics	- External trade in goods statistics - External trade in services statistics
<i>S.13 General government</i>	- Central and local government accounts - KOSTRA	- Central and local government accounts - KOSTRA	- External trade in goods statistics - Special reports and estimations (development aid)	- External trade in goods statistics
<i>S.14 Households</i>	- Retail trade statistics - Household consumer/budget survey (HBS) (periodical) - SUT balancing	- Income and wealth statistics - Accounting statistics self employed - Building statistics	- External trade in goods statistics	- External trade in goods statistics - Travel surveys - Special estimations (holyday homes)
<i>S.15 NPISHs</i>	Accounting statistics - Counterpart data	Accounting statistics	External trade in goods statistics - Special reports and estimations (development aid)	External trade in goods statistics

5.1.9 The annual **HBS** was stopped in 2010 due to quality problems. A new survey was conducted in 2012 with the results published in 2013 and taken in the 2014 main revision of the NNA. The next survey is planned for 2022. This implies that the HBS as a source for estimating households' final consumption expenditures, even more than before, has to be supported by other sources, i.e., retail trade statistics, SUT balancing (commodity flows) and other indicators. For more details, see the various consumption groups in chapter 5.7.

5.1.10 The accounting-based **SBS** is the main source for **GFCF** in non-financial and financial enterprises. However, for many industries, this information is supported by both building (construction) statistics and SUT balancing (commodity flows).

5.2 The borderline cases

5.2.1 Section 5.2 mostly deals with the **borderline between intermediate consumption and final uses**. This is an important borderline since expenditures incurred by producers of all kinds recorded as intermediate consumption are not contributing to GDP, because they are deducted from output recorded with the same producers.

Borderline cases of Households' Final Consumption Expenditures

5.2.2 The following is a description on some **particular problem areas**. The description is a summarized one, not in detail. In addition, for a number of items, it may be sufficient to give reference to descriptions elsewhere in the inventory.

5.2.3 **Wages and salaries (W&S) in kind** is the first problem area. The NNA has had a good coverage of this item since the 1995 revision, in particular from utilizing the RWS (Register of Wages and Salaries) source. The new source of *A-melding* replacing the RWS is referred to in chapter 4, in chapter 7 on exhaustiveness, and in chapter 10 on the source of the *A-melding*. The HFCE includes income in kind items based on various sources (free travel, business cars) and meets counterpart consistency.

5.2.4 **Final consumption of own production** is treated explicitly by means of separate products specified among the NNA-products, particularly agricultural and fishery products within goods and dwelling services within services. See the relevant sections of chapter 3 describing and illustrating output of these activities and products. It should be emphasized that a major part of production for own final use is directed at the HFCE.

5.2.5 **Dwelling services** have always been regarded as an item of utmost importance. Treatment in the NNA is described in chapter 3 (section 3.18 in particular) and in section 5.7D below. Over the years, large revisions have been made to this item in Norway, both numerically and methodologically. Considerable efforts and resources have been put into improving this important item, including split between intermediate consumption and HFCE for expenditure of owner-occupiers on decoration, maintenance and repair of the dwelling. The Eurostat approach following the stratification method was introduced in the NNA in the 1995 revision, before then the user cost method was applied.

5.2.6 **Tips** have been referred to in various sections of the inventory, in chapters 3, 4 and 7. While tips have not been considered worthwhile to be included earlier in the NA estimates in Norway, they were nevertheless **included in the 2002 revision**, in particular for taxi transport and catering services in restaurants.

5.2.7 **Borderline between HFCE and IC or GFCF** is a problem area centered at the distribution issues of uses of products and referred to in chapter 6 in particular. Section 5.4 below also has a description on borderline between intermediate consumption and final consumption (as relevant for determining the size of GDP). The distribution of **consumer durables on HFCE and GFCF** is another issue to be looked into in the balancing process, and estimated from various sources and indicators at hand, such as register of vehicles (see chapter 10 and also those described elsewhere in the inventory).

5.2.8 Expenditures of residents abroad and of non-residents on the domestic territory have also been described elsewhere in the inventory (see in particular section 5.7M below, but also sections 5.14 and 5.16 on exports of services and imports of services, respectively).

5.2.9 Coverage and treatment of shuttle trade is an item believed to be unimportant in Norway. See also sections 5.13 and 5.15 below on exports of goods and import of goods.

5.2.10 The HFCE directly financed by insurance companies is not much explicitly treated in the NNA, partly due to lack of clarification concerning the problem at stake, and partly due to lack of relevant data if concerning differences between flows of payments involved (see also output of insurance services described in section 3.17).

5.2.11 Coverage and treatment of persons living in institutions is not explicitly dealt with in the NNA as the HBS does not include information on institutional households. Such collective households - persons in common households like hospitals, boarding houses, prisons etc. - are however taken into consideration when judgments are made in the balancing process and - in particular - in the main revisions to justify additions to the levels.

5.2.12 Charity and gifts from abroad should not be of much relevance in Norway, and no specific information is taken into account for estimating this item. Small amounts on gifts in kind may be included here, nevertheless.

5.2.13 Consumption of illegal production and import is included in explicit estimations in the NNA. Estimations for prostitution, drugs and smuggling of alcohol have been included since the main revision of 2011.

5.2.14 Service charge concept for insurance services is included in the NNA in accordance with ESA 2010 principles (see also section 3.17 above).

5.2.15 Net valuation of the use of lottery services is included in the NNA in accordance with ESA 2010 principles (see also section 3.24 above).

5.2.16 Borderline between taxes and services provided to households by general government is respected in accordance with ESA 2010 rules. Purchases of government services have been allocated to different uses, including HFCE, from analysing the government accounts (see e.g., sections 3.21, 4.8 and 5.9), while taxes (outside taxes on production) are excluded from the HFCE. Another borderline may be mentioned: subscriptions, contributions etc. to NPISH is treated in the NNA as current transfers from households to NPISHs - at least in principle - while there are practical problems involved in explicitly accounting for this (see also section 5.8 below).

5.2.17 Car registration taxes are also described elsewhere in the inventory, in sections 3.13 (registration tax on existing motor vehicles), 3.28 (import duty on motor vehicles) and 4.8 (registration duty on motor vehicles). Treatment of the three types of taxes is tax on product for the first and second, and other tax on production (business part) for the last of these three different special taxes related to motor vehicles in Norway.

5.2.18 Stamp taxes - or duties on documents in Norway – are considered taxes on products.

5.2.19 Expenditure on goods under a hire purchase is recorded in accordance with ESA 2010 principles, recorded as the HFCE at purchasers' prices, i.e., recorded as if bought by the purchaser on the day taking possession of the good (usually durable good).

5.2.20 Second-hand goods represent a difficult area of estimation in that information is scarce on explicit trade margins for the respective second-hand goods. However, accounting data (SBS-based)

include a basis for estimating trade margin output and consumption eventually. A separate retail industry (47.79 Retail sale of second-hand goods in stores) is covered in the data sources for distribute trades, while figures are small. Analysis of the type of transactions in second-hand goods is vital as regards treatment. Imported goods are recorded in full value, so is also disinvestments (GFCF to become HFCE), while not for net sales among households (trade margin only for HFCE). See also section 3.13.

5.2.21 Government's payments to market producers (for medicines etc.) are estimated in the NNA. The description on this item is found in section 5.9.

5.2.22 Package travel tours have been mentioned as problematic as concerns treatment in the SUT. The HFCE estimation of this item in the NNA starts from output-based estimation through two products: tour operator services and motor coach services. The first (recorded gross) is the main product of travel agency industry, while the latter has no direct relation to HFCE, rather recorded as intermediate consumption to various transportation industries. Accounting SBS data (with supporting details) are used as source, while the HBS has been used for control purposes only. Occasionally, smoothing procedures have proved necessary.

5.2.23 Second-hand goods (existing durables) appear in the HFCE in the form of used cars sold from the enterprise sectors to households or as imported and purchased by households. In the former case the figures are estimated based on the assumption that 3 years of use of purchased cars in industries before sales to households take place, in the latter case they are included in the external trade statistics. Secondly, the trade margins on sales of second-hand goods from the trade industry to the household sector are estimated on the basis of the SBS for the trade industry. No other sales of second-hand goods are estimated related to the HFCE sector, neither transactions between households, nor the sales of second-hand goods (for example valuables) from households to other sectors.

Borderline cases of Gross Fixed Capital Formation

5.2.24 In the national accounts the change of ownership will normally decide the time of recording of fixed capital formation transaction. For particular buildings and constructions taking more than one period to finish, it is assumed that the change of ownership will take place successively as the construction moves forward, and total investment value will be recorded in several periods accordingly.

5.2.25 In the NNA - on **military expenditures** - the principles and treatment of ESA 2010 and 2008 SNA have been followed. Government expenditures on **military buildings, installations and equipment, including weapons**, are thus **treated as gross fixed capital formation (GFCF)**. This is described elsewhere, e.g., with COFOG segment on defence affairs and services.

5.2.26 Illustrated by 2019 figures, military GFCF was distributed on the following main types of fixed assets:

Military investments recorded as GFCF. NOK billion. 2019.

<i>Type of fixed asset</i>	
Buildings	0.2
Structures	2.9
Transport equipment	11.2
Other machinery, equipment and weapons	11.8
R&D and IT software	0.3
Total GFCF	26.4

5.2.27 Net purchases by producer units of antiques should be recorded as **GFCF**, as should works of art created during the year and purchased by producer units. In 2008 SNA / ESA 2010, this is part of the third category of gross capital formation (acquisitions less disposals of **valuables**). Obviously, this is a difficult issue. In the NNA, antiques and works of art are recognized in a specific NNA-product, but with contents confined from user information available. Since there are recordings in the NNA for household consumption expenditure, exports, intermediate consumption and post activities, and **just a small amount for GFCF**, the producer units' expenses in this area are not dealt with seriously or being recorded among unspecified intermediate consumption.

5.2.28 There has been **limited effort made in the NNA to split** between the two assets - **buildings and land underlying buildings** - when land and buildings are purchased together. In addition, research has been initiated on this subject matter in the NNA.⁹

5.2.29 Three types of expenditures are all to be regarded as GFCF, i.e., expenditures on **land improvements and reclamation**, expenditures on the **drilling of wells** or shafts for extracting oil and natural gas or working mineral deposits, and certain expenditures on **planting new forests, woodlands, vineyards and orchards**. In the NNA, they are all treated as GFCF.

5.2.30 Next issue is **costs incurred in the transfer of ownership of land, buildings, other fixed capital assets or intangible assets**. In the NNA, uncompleted prospective purchases and sales are included without transfer costs. This is the valuation treatment adopted in construction statistics when producing at own-account. Transfer costs are however included in the recordings of purchases and sale of second-hand dwellings and building sites.

5.2.31 Installation costs are recorded **with transfer costs** in a separate NNA item, which is distributed on types of fixed assets for GFCF, plus intermediate consumption in some industries and exports. Such installation costs are particularly important for GFCF in oil platforms and machinery, and for intermediate consumption in construction and telecommunication. About one half is recorded as GFCF and distributed among type of fixed assets as illustrated by 2019 figures:

Installations costs. NOK billion. 2019

<i>Type of fixed assets</i>	
Ships and boats	1.9
Oil production platforms and oil drilling rigs and modules	1.8
Agricultural and forestry machinery and equipment	0.2
Machinery and equipment in manufacturing and mining	1.1
Machinery and equipment in other industries	4.0
Total for gross fixed capital formation	9.1

5.2.32 For GFCF in residential and non-residential buildings (new buildings), **transfer costs** are also reflected in the following characteristic NNA-products of real estate activities:

⁹ See Liu (2016), 'Including land as a balance sheet item in the Norwegian National Accounts', *Documents*, 2016/01, Statistics Norway; and Scheele *et al.* (2019), 'Implementering av grunn i inntekts- og kapitalregnskapet', *Notater*, 2019/2, Statistics Norway.

Transfer costs. NOK billion. 2019.

<i>Transfer costs in:</i>	
681 000 Real estate services with own property	8.2
683 100 Real estate agency services on a fee or contract basis	20.3

5.2.33 The households of sole proprietors commonly use goods and services for both **household and business purposes**. In view of more direct use of household consumer surveys in the NNA, expenditures for household purposes are obtained from these household surveys, while intermediate consumption for business purposes is derived from the use of accounting statistics of self-employed.

5.2.34 Own-account output of fixed capital goods (**own-account construction**) is described and referred to in detail throughout the output sections of all industries. Large or characteristic items are found in NACE B on oil and gas extraction, NACE D on electricity production, NACE F on construction, and NACE J on telecommunications. The various own-account construction items are separately identified as types of fixed assets (see 5.10 below illustrated with 2019 values). Own-account construction output is generally estimated from production costs.

5.3 Valuation

5.3.1 Valuation is **particularly relevant for transactions in goods and services**, but also to the general aspect of **time of recording**. In general, **the accruals basis principle** of recording is applied in the NNA.

5.3.2 The use categories - both intermediate consumption and final uses - are valued at **purchasers' prices**, including **exports at f.o.b.** Imports are valued at **c.i.f.** According to the ESA 2010 principles, a global c.i.f./f.o.b. correction is made to arrive at **imports in f.o.b. prices**. In the balance of payments such an alternative estimation of imports f.o.b. has long been made for reporting to Eurostat and the IMF and is now also presented as memo items in the national BoP publications. In the NNA, **household consumption expenditure** is recorded in **purchasers' prices**. **Gross fixed capital formation** is also valued at **purchasers' prices**, including installation charges and other costs. Products used for **intermediate consumption** are valued at **purchasers' prices** for purchased products, while mostly at basic prices for own-produced products.

5.3.3 As for **uncompleted fixed assets**, how to make the proper time of recording is an issue that has been discussed on several occasions in Statistics Norway. During the 1995 main revision, treatment of **non-movable oil production platforms and constructions** changed from work-in-progress (changes in inventories) to gross fixed capital formation directly in the oil and gas extraction industry, while uncompleted movable exploration and drilling rigs continued to be recorded as work-in-progress on the hand of the producer. ESA 2010 distinguishes between structures and other fixed assets (e.g., ships and oil rigs) in terms of treatment. In fact, this dividing line is a problematic one in the sense that **movable oil rigs** should hardly be seen as fundamentally different from **other oil platforms**, with both types being used in the oil and gas extraction from the North Sea. In the NNA, both categories have been considered structures and thus **qualified for the revised treatment as GFCF** (other requirements also being fulfilled).

5.3.4 Still on uncompleted fixed assets, there was earlier an issue on **large investment program for defence activities**, i.e., building of large ships (frigates) for the navy. These were ships to be delivered

according to contract after several years in construction (shipyard abroad). The first delivery started in 2006 and the final delivery took place in 2011. An issue here is whether to record this as work in progress (by producer abroad or by owner domestically) or as gross fixed capital formation. The solution is, in accordance with ESA 2010, to treat the building of the ships as work in progress on the hand of the producer in years before being delivered. Until delivery, the treatment implies a recording in financial account only. When delivered, it is registered as imports of a good for GFCF, offset by a negative financial transaction.

5.4 Transition from private accounting and administrative concepts to ESA 2010 national accounts concepts

5.4.1 Here, the **accounting based SBS** should be emphasised, as this is the source for both intermediate consumption and gross fixed capital formation in most industries. The background for these statistics is Directorate of Taxes' Income Statements - for short **NO** (*NæringsOppgave* in Norwegian) - from which the items have been conceptually selected for direct use in compiling the various NA items. It is referred to in section 3.4 concerning output and intermediate consumption, and in section 4.4 for compensation of employees. **Gross fixed capital formation** of the accounting statistics is based on NO and supplementary forms (TS), distinguishing between acquisitions, sales and costs. In addition, there are sub-items for existing buildings and structures and financial leasing. This is useful information for the balancing of supply and uses of products in the NNA. The specifications by type of fixed assets follow the classification used by the tax authorities that may deviate from the corresponding classification used in the NNA, which requires more details.

5.4.2 Total fixed capital formation for an industry is taken as the sum of investments in machinery and equipment, in transport equipment and in construction and buildings as reported in NO and TS. Gross fixed capital formation by main types of capital is defined according to the following tables:

Gross fixed capital formation in machinery and equipment

<i>NO/TS/Saldo items</i>	<i>Description</i>
Acquisition p0570	Acquisition of office machinery (saldo group a)
- Disposal p0570	- Disposal at market value of office machinery (saldo group a)
+ Acquisition p0580	- Acquisition of passenger cars, machinery, furniture and other fixed assets (saldo group d)
- Disposal p0580	- Disposal at market value of passenger cars, machinery, furniture and other fixed assets (saldo group d)
+ TS IKTutg+ AndreIKTutg - IKTakt - andreIKTakt+ Progutg - Progakt	Difference between <i>total</i> expenditures on hardware and software and <i>activated</i> expenditures on hardware and software
+ TS EGPROGUTG- EGPROGAKT	Difference between <i>total</i> expenditures on own account software for own use and <i>activated</i> expenditures on own account developed software for own use
+ NO6500	0,02 *(P6500 Tools, equipment etc., not activated)
+ Share of p4995	Identical to output item Own account investment work on machinery

Gross fixed capital formation in transport equipment

<i>NO/TS/Saldo items</i>	<i>Description</i>
Acquisition p0550	Investments in ships, oilrigs and airplanes (saldo groups e and f)
- Disposal p0550	- Disposal of ships, oilrigs and airplanes (saldo groups e and f)
Acquisition p0560	Investments in other transport equipments exclusive cars (saldo group c)
- Disposal p0560	- Disposal at market value of other transport equipments exclusive of cars (saldo group c)

Gross fixed capital formation in buildings and constructions

<i>NO/TS/Saldo items</i>	<i>Description</i>
Acquisition p0520	Investments in other buildings and construction (saldo groups g, h, i)
- Disposal p0520	- Disposal at market value of other buildings and constructions (saldo groups g,h,i)
Acquisition p0540	Investments in dwellings including land
- Disposal p0540	- Disposal at market value of dwellings
+ NO6600	Repairs and maintenance, buildings (NB! 5%)
+ Share of p4995	Identical to output item Own account investment work on buildings and constructions

5.4.3 The annual **central and local government accounts** are used to estimate GFCF in the non-market activities of central and local government, respectively. For information on the structure and details of these administrative sources, see chapter 3.21.

5.5 The roles of direct and indirect estimation methods and of benchmarks and extrapolations

5.5.1 **Direct methods** are used, except that changes in inventories - basically at least - are arrived at as a residual at product level, and subsequently at global level. The application of direct methods comes from up-to-date statistical sources that are available with mostly annual data. **Indirect estimation methods** are used partly for gross fixed capital formation when annual sources are lacking, but this is quite limited after the introduction of structural business statistics (SBS).

5.5.2 **Indirect estimation methods** are also used partly when estimating NPISH final consumption expenditure. In this case, estimations are made indirectly on the basis of central and local government accounts (counterpart data), which provide data on grants to such institutions. In the 2002 main revision, however, direct methods were introduced to a larger extent for NPISH final consumption expenditure. Supplementary information on the relative coverage from government and other special calculations based on fees paid are also used.

5.5.3 In the Norwegian statistical system - and using the SUT framework and combining different kinds of information sources - economic statistics have been established with a **high degree of regularity**, on **annual basis** in most cases. Short-term statistics for quarterly national accounts and

balance of payments add to this but are outside the scope in this respect. Benchmarking and extrapolation are however of **some importance** in the NNA compilation within the scope of the expenditure approach, in particular in estimating **household's final consumption expenditures**. It means that new levels obtained initially for the benchmark year are extrapolated to other years so that revised time series are being established, normally from the same quality of sources that was initially introduced for the benchmark year.

5.5.4 **Benchmark** then has an important role to play when undertaking a **main revision**. It is usually both convenient and useful to establish revised levels for the NA estimates for a **benchmark year** in the first place. In the ESA 2010 implementation, the year 2012 played such a role (not in all respects, however), and 1988, 1998, 2003 and 2007 had the same sort of benchmark role in the 1995, 2002, 2006 and 2011 main revisions respectively.

5.6 The main approaches taken with respect to exhaustiveness

5.6.1 Adjustments to the expenditure approach to ensure exhaustiveness are made regularly. For example, **household consumption expenditure** is increased due to adjustments such as that to register data on taxi operation and additions for dwelling services from holiday homes abroad. Also, adjustments related to illegal activities (smuggled spirits, illegal drugs and prostitution services) must be mentioned here.

5.6.2 **Chapter 7** below makes further reference to exhaustiveness in respect to adjustments to household consumption expenditures. Also mentioned is Norway's position regarding the Intrastat problem in relation to the compilation of exports and imports of goods. See also Eurostat Task Force recommendations on construction affecting gross fixed capital formation.

5.7 Household final consumption expenditure

Overview

5.7.1 Section 5.7 on household final consumption expenditure (HFCE) consists of two sub-sections - **general aspects and individual COICOP groups**, while **individual borderline issues** are discussed in chapter 5.2. After giving an overview in the first sub-section, the second sub-section provides a comprehensive and illustrative review of the individual COICOP groups. The presentation here is related to **the main categories of uses for main products consumed** and also indicates which types of sources have been exploited in each group. The product illustration referred to - for the largest product of each COICOP group - is another way of illustrating the Norwegian approach in which **detailed treatment of product flows** is manifested in the **integrated annual supply and use tables**. Descriptions and illustrations of the national accounting work in Norway leading to the integrated annual supply and use tables are found in several sections throughout the inventory.

5.7.2 **Household final consumption expenditure** is defined according to **ESA 2010** and the **COICOP** classification scheme. Still, the **domestic concept** is applied **at the detailed level**. It means the COICOP groups cover recorded household consumption expenditure in the country at this level, irrespective of resident or non-resident households. Although the split on the two household categories might be implemented, the integration of the purchases abroad by resident households is still not

possible due to lack of information concerning COICOP details. Satellite accounts on tourism have been developed in Norway on a current basis, providing the suitable framework, but unfortunately with no sufficient data on tourists' purchases abroad. There are plans however, to use information from credit card companies for estimating a breakdown of households' expenditures abroad on more detailed categories or products.

5.7.3 Household final consumption expenditure in total is estimated at 1493.6 billion in 2019, or **41.9 per cent of GDP**. COICOP 04 Housing, water, electricity, gas and other fuels is the largest group – 21.8 per cent in 2019, followed by - all more than 10 per cent of HFCE - COICOP 07 Transport, COICOP 09 Recreation and culture, and COICOP 01 Food and non-alcoholic beverages.

Household consumption expenditure. NOK billion and per cent. 2019.

<i>COICOP groups</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>	<i>Per cent of HFCE</i>
01 Food and non-alcoholic beverages	162.2	4.6	10.9
02 Alcoholic beverages, tobacco, etc.	54.7	1.5	3.7
03 Clothing and footwear	67.3	1.9	4.5
04 Housing, water, electricity, gas and other fuels	326.1	9.2	21.8
05 Furnishings, household equipment and routine maintenance of the house	86.7	2.4	5.8
06 Health	43.6	1.2	2.9
07 Transport	221.0	6.2	14.8
08 Communications	32.6	0.9	2.2
09 Recreation and culture	166.4	4.7	11.1
10 Education	6.4	0.2	0.4
11 Restaurants and hotels	100.3	2.8	6.7
12 Miscellaneous goods and services	153.2	4.3	10.3
Direct purchases abroad by resident households	124.8	3.5	8.4
- Direct purchases in Norway by non-residents	-51.9	-1.5	-3.5
Household final consumption expenditure (HFCE)	1 493.6	41.9	100.0

Main data sources

5.7.4 In general, the **main sources used** for estimating households final consumption expenditures have basically been the following three (the third being a class of "similar and related sources"):

- | | |
|-----|--|
| (1) | Household consumer surveys or Household budget surveys (HBS for short in tables) |
| (2) | Retail trade statistics (RT for short) |
| (3) | Output figures, selected indicators and the commodity flow method (Other and CF) |

All three main sources in general apply for consumption goods, while main sources (1) and (3) are most relevant for the services in HFCE. Main source (3) does not apply in the same direct way for goods as for services, due to trade and other margins and different valuations. For a detailed review of the sources used, see sections below (5.7A - 5.7L) covering the various COICOP groups.

5.7.5 For the year **2019** the **HBS is in general not used directly or in isolation from other sources**. The reason is that a steady drop in response rates made the quality of the results of the annual

survey weakened dramatically in recent years. The results were published at three years average only, before the survey finally was stopped in 2010. The last survey was from 2012 and was published in 2013. The next survey is planned to take place in 2022.

5.7.6 The **RT source** is mainly used - both in annual and quarterly NNA - **in the form of retail sales indices** based on annual retail trade statistics and monthly indices of retail sales, respectively. **Retail sales matrices** have been worked as background for benchmarking in the main revisions, like for the base year 2012 used in the 2014 main revision, providing cross-classified table by COICOP groups and RT branches. On ad hoc occasions, studies are made on the non-HFCE uses based on information from the ad hoc trade margin surveys and on distribution channels etc. Likewise, HFCE not purchased from retailers are dealt with, such as production for own final use/consumption, described in chapter 3 as output from agriculture, fishing, dwelling services etc. See also sub-section on individual issues below.

5.7.7 The **third source group** includes cases where consumption of services is estimated directly from output of the same services (SBS-based or not), and use of volume and price indicators for selected COICOP groups, as well as the commodity-flow approach (CF) that might also involve splitting output for more use categories than just HFCE. The CF also has a general supporting role in the HFCE compilation within the SUT framework (see balancing described in chapter 6).

5.7.8 For the **HFCE estimation in 2019**, the interplay between the main sources used in the NNA might be described as follows:

Step 1	The starting point is the RT data based on the RT sales matrices converted into COICOP groups and with VAT added adjustments made for changes in stocks and other uses.
Step 2	Converted RT data (levels and growth rates) for consumption groups covering goods are compared to HBS data on comparable products or group of products.
Step 3	Other sources other than RT and HBS might be preferred for certain specific HFCE groups or detailed products (goods).
Step 4	For HFCE in services, CF is used in extrapolating either consumption groups or selected services products using volume growth rates in corresponding services industries in combination with CPI components, or other specific sources for HFCE are used.
Step 5	Adjustment is made to detailed HFCE groups or detailed products within a consumption group utilizing balancing method

5.7.9 In Norway, we thus have a multiple-source situation when estimating each of the COICOP items, and not as in the Eurostat tabular approach where one main source is basically selected at the item level. The role of CF and the balancing adjustments are rather extensive in the detailed calculations by products in the HFCE, and even more in the calculations of the COICOP groups. The CF is used for reconciliation, not only for calculating residuals.

5.7.10 This **stepwise HFCE scheme used in the NNA** may be considered as a variant of the **analytical tables invented by Eurostat**. The former is mainly developed in terms of annual changes from previous year, while the latter is directed at estimates in current prices of a given year.

5.7.11 The NNA stepwise HFCE scheme (see 5.7.8 above) assumes - from long-established experience - **selecting main sources** for explicit use **by COICOP groups in advance**. This mostly

means several sources used in combination, often involving HBS (when available), RT and CF altogether. It implies that - in contrast to the requirement set in the Eurostat tabular approach - two or more independent estimates are not worked out for consideration (best estimate) in each of the COICOP groups. By selecting the way of combining sources available at this detailed level, a **best-estimate consideration is made** nonetheless in the NNA.

Individual COICOP groups

5.7A Household consumption - COICOP 01 Food and non-alcoholic beverages

5.7A.1 In the NNA, household final consumption expenditure **COICOP 01 is specified in 11 group items**. These are 9 items of food and 2 items of non-alcoholic beverages. Breakdown by products is much more detailed. COICOP 01 consists of non-durable consumption goods, exclusively.

5.7A.2 Household consumption expenditure of COICOP 01 is estimated at NOK 162.2 billion in 2019, or **4.6 per cent of GDP**. Its share in the total household final consumption expenditure (**HFCE**) is **10.9 per cent**.

5.7A.3 Main sources used are:

Household budget surveys
Annual retail trade statistics
Consumer Price Index material
Quantity information on beverages

5.7A.4 The first three **sources listed** belong to the main sources used for national accounting. In addition, some relevant quantity information is available for some of the consumption groups, i.e., for items that consist of goods that are heavily taxed by government. These are most groups of beverages - Mineral water, soft drinks etc. For these HFCE groups, there are quantity data in litres available. The quantity data have been exploited in constructing volume indices to be combined with corresponding price indices of CPI.

5.7A.5 Illustration by 2019 figures follows below by consumption groups and respective main products. First column indicates COICOP group; second column indicates how many NNA-products are specified, with the corresponding HFCE value in column 3, while main sources are indicated in column 4 (HBS= Household Budget Survey, RT=Retail Trade Statistics; CF=Commodity Flow method; Other=Other kinds of statistics like surveys statistics, large enterprise statistics, other production statistics, price and quantity indicators combined, etc.).

Example: COICOP group A11 (equivalent of 01.1.1) Bread and cereals is specified by 7 NNA-products with a total purchasers' value of NOK 17.6 billion in 2019. A combination of the HBS, RT and CF sources are used.
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Household consumption expenditure of COICOP 01. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HFCE value</i>	<i>Sources used</i>
A11 Bread and cereals	7	17.6	HBS, RT, CF
A12 Meat	11	28.6	HBS, RT, CF
A13 Fish	16	8.9	HBS, RT, CF
A14 Milk, cheese and eggs	7	22.4	HBS, RT, CF
A15 Oils and fats	2	2.4	HBS, RT, CF
A16 Fruit	4	13.3	HBS, RT, CF
A17 Vegetables	7	12.9	HBS, RT, CF
A18 Sugar, jam, honey, chocolate and confectionery	6	20.6	HBS, RT, CF
A19 Spices and food products n.e.c.	6	15.6	HBS, RT, CF
A21 Coffee, tea and cocoa	3	5.3	HBS, RT, CF
A22 Mineral waters, soft drinks, fruit and vegetable juices	3	14.8	Other (price /volume), CF

5.7B Household consumption - COICOP 02 Alcoholic beverages, tobacco and narcotics

5.7B.1 In the NNA, household final consumption expenditure **COICOP 02 is specified in 5 group items**. These are 3 items of alcoholic beverages, one item of tobacco and one item of narcotics. The COICOP item of narcotics is included. Breakdown by products is much more detailed. COICOP 02 consists of non-durable consumption goods, exclusively.

5.7B.2 Household consumption expenditure of COICOP 02 is estimated at NOK 54.7 billion in 2019, or **1.5 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **3.7 per cent** in 2019.

5.7B.3 Main sources used are:

Annual retail trade statistics
Consumer Price Index material
Quantity information on beverages and tobacco
Estimations on consumption of tobacco
Separate estimations on drugs

5.7B.4 The first couple of **sources listed** belong to the main sources used for national accounting. In addition, some relevant quantity information is available for items that are heavily taxed by government. In COICOP 02, these include Wine, Spirits and liqueurs. For these HFCE groups there are quantity data in terms of litres and pieces available. They have been exploited in constructing volume indices to be combined with corresponding price indices of CPI. For wines, and for spirits and liqueurs, the quantity information was utilized for the main revision benchmark estimation only; instead, RT is used directly as there is a retail branch specified that reflects the sales of these alcoholic beverages through the Norwegian monopoly (State Wine Monopoly). It is noted that the HBS has never been used for this COICOP for obvious reasons (unreliable recording/reporting). Tobacco

consumption is calculated by using estimations in tobacco use in grams combined with a corresponding price index of CPI. Smuggling of alcohol and tobacco is covered as from the main revision of 2011.

5.7B.5 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 02. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
B11 Spirits	3	7.1	RT, CF
B12 Wine	2	9.8	RT, CF
B13 Beer	1	13.5	Other (price /volume), CF
B20 Tobacco	2	22.4	Other (price /volume), CF
B30 Narcotics	1	1.9	Other (price /volume), CF

5.7C Household consumption - COICOP 03 Clothing and footwear

5.7C.1 In the NNA, household final consumption expenditure **COICOP 03 is specified in 6 group items**. These are 4 items of clothing and 2 items of footwear. Breakdown by products is much more detailed. COICOP 03 consists of semi-durable consumption goods and two minor groups of repairs categorized as services.

5.7C.2 Household consumption expenditure of COICOP 03 is estimated at NOK 67.3 billion in 2019, or **1.9 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **4.5 per cent**.

5.7C.3 Main sources used are:

Household budget surveys
Annual retail trade statistics
Annual surveys of repair activities (SBS-based)

5.7C.4 The first two **sources listed** belong to the main sources used for national accounting of HFCE and are both utilized according to the general scheme (see 5.7 introduction). The third source is relevant for the groups of repairs.

5.7C.5 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 03. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
C11 Clothing materials	2	0.6	HBS, RT, CF
C12 Garments	1	54.7	HBS, RT, CF
C13 Other articles of clothing and clothing accessories	5	1.8	HBS, RT, CF
C14 Repair and hire of clothing	3	0.7	Other, CF
C21 Shoes and other footwear, incl. repair and hire of footwear	1	9.2	HBS, RT, CF
C22 Repair of shoes	1	0.3	Other, CF

5.7D Household consumption - COICOP 04 Housing, water, electricity, gas and other fuels

5.7D.1 In the NNA, household final consumption expenditure **COICOP 04 is specified in 10 group items**. These are 5 items relating to dwellings (actual rentals, imputed rentals, maintenance and repair services, materials for maintenance and repairs, and water supply and various services, and 5 items of electricity, gas and fuels. Breakdown by products is much more detailed. COICOP 04 mostly consists of services (dwelling services), but also non-durable goods contribute significantly. Electricity is classified as non-durable goods.

5.7D.2 Household consumption expenditure of COICOP 04 is estimated at 326.1 billion NOK in 2019, or **9.2 per cent of GDP**. The present share in the total household final consumption expenditure (HFCE) is **21.8 per cent** in 2019. The share of COICOP 04 in the total HFCE is the highest among the main COICOP groups.

5.7D.3 Main sources used are:

Housing statistics of various kinds, including surveys on actual rents
Annual electricity statistics
Annual energy statistics

5.7D.4 Housing statistics are used for the dwelling services, in combination with output statistics for certain items. Combined price and quantity indicators are used for electricity, liquid fuels and solid fuels, in which energy statistics have been taken into account.

5.7D.5 Illustration by 2019 follows by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 04. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
D10 Actual rentals paid by tenants and other actual rentals	3	60.8	Other, CF
D20 Imputed rentals of owner-occupiers and other imputed rentals	1	185.8	Other, CF
D31 Materials for the maintenance and repair of the dwelling	16	0.5	Other, CF
D32 Services for the maintenance and repair of the dwelling	4	1.4	Other, CF
D40 Other goods and services related to dwellings	7	22.9	Other, CF
D51 Electricity	1	49.1	Other (price /volume), CF
D52 Gas	2	0.2	Other, CF
D53 Liquid fuels	2	0.0	Other (price /volume), CF
D54 Solid fuels	2	3.9	Other (price /volume), CF
D55 District heat energy	1	1.5	Other

5.7E Household consumption - COICOP 05 Furnishings, household equipment and routine maintenance of the house

5.7E.1 In the NNA, household final consumption expenditure **COICOP 05 is specified in 12 group items**. These are 3 items of furniture, furnishings etc., 1 item of household textiles, 4 items of household appliances, 1 item of glassware, tableware and household utensils, 1 item of tools and equipment for house and garden, and 2 items of goods and services for routine household maintenance. Breakdown by products is much more detailed. COICOP 05 consists of consumption goods by all three types of durability (durable goods most important), while 3 items are considered services (2 items of repair, plus domestic services).

5.7E.2 Household consumption expenditure of COICOP 05 is estimated at NOK 86.7 billion in 2019, or **2.4 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **5.8 per cent** in 2019.

5.7E.3 **Main sources used** are:

Household budget surveys
Annual retail trade statistics
Annual surveys of repair activities (SBS)

5.7E.4 The first two **sources listed** belong to the main sources used for national accounting and are both utilized for the goods part according to the general scheme (see 5.7 introduction). The third source is relevant for group of repairs.

5.7E.5 **Illustration by 2019 figures** follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 05. NOK billion. 2019

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
E11 Furniture and furnishings	14	29.9	HBS,RT,CF
E12 Carpets and other floor coverings	1	1.6	HBS,RT,CF
E13 Repair of furniture, furnishings and floor coverings	1	0.3	Other, CF
E20 Household textiles	8	10.6	HBS,RT,CF
E31 Major household appliances whether electric or not and small electric household appliances	4	9.1	HBS,RT,CF
E32 Other household appliances	1	3.7	HBS,RT,CF
E33 Repair of household appliances	1	0.5	Other, CF
E40 Glassware, tableware and household utensils	10	9.7	HBS,RT,CF
E51 Major tools and equipment for the house and garden	5	4.9	HBS,RT,CF
E52 Small tools and miscellaneous accessories	8	8.1	HBS,RT,CF
E61 Non-durable household goods	20	7.4	HBS,RT,CF
E62 Domestic and household services	4	0.9	CF

5.7F Household consumption - COICOP 06 Health

5.7F.1 In the NNA, household final consumption expenditure **COICOP 06 is specified in 7 group items**. These are 3 items of medical products, appliances and equipment, 3 items of outpatient services and one item on hospital services. Breakdown by products is much more detailed. COICOP 06 consists mostly of services, but non-durable (group of medicaments) and durable consumption goods (group of spectacles etc.) are also included.

5.7F.2 Household consumption expenditure of COICOP 06 is estimated at NOK 43.6 billion in 2019, or **1.2 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **2.9 per cent**.

5.7F.3 **Main sources used** are:

Household budget surveys
Annual retail trade statistics
Central government accounts (including National Insurance)
Local government accounts – KOSTRA reporting
Income sample surveys for private practitioners, dentists, etc.

5.7F.4 The first and second of the **sources listed** belong to the main sources used for national accounting. The RT is used in the two groups of consumption goods. Government accounts are used when non-market parts are involved, and for market health services the source of ad hoc income sample surveys have been utilized for private practitioners, dentists etc.

5.7F.5 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 06. NOK billion. 2019

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
F11 Pharmaceutical products	3	11.9	HBS,RT,CF
F12 Other medical products, therapeutic appliances and equipment	3	0.8	HBS,RT,CF
F13 Spectacles, orthopaedic equipment	3	7.1	HBS,RT
F21 Medical services	11	6.4	Other,CF
F22 Dental services	2	13.0	Other,CF
F23 Other health services outside institutions	3	3.2	Other,CF
F30 Hospital services	2	1.1	Other, CF

5.7G Household consumption - COICOP 07 Transport

5.7G.1 In the NNA, household final consumption expenditure **COICOP 07 is specified in 12 items.** These are 3 items of purchase of vehicles, 4 items of operation of personal transport equipment and 5 items of transport services. Breakdown by products is much more detailed. COICOP 07 consists of durables (first group), non-durable goods (part of second group), and of services, including repair of vehicles.

5.7G.2 Household consumption expenditure of COICOP 07 is estimated at NOK 221 billion in 2019, or **6.2 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **14.8 per cent** in 2019. Actually, this share is higher than that for COICOP 01 Food and non-alcoholic beverages.

5.7G.3 Main sources used are:

Household consumer surveys
Annual retail trade statistics
Statistics on new registrations of motor vehicles
Energy statistics
Consumer Price Index material

5.7G.4 The second of the **sources listed** belongs to the main sources used for national accounting, and is used for group of spare parts etc. The last three sources listed are volume and price indicators that are combined for estimations of the remaining items (purchase of vehicles, gasoline).

5.7G.5 Statistics of new registrations of motor vehicles, which include new cars and imports of second-hand cars, are being used. There are data available on number of cars and prices by type. In

reviewing this issue, better prices on cars are looked for. Regarding second-hand cars sold from industries to households, special estimations are conducted.

5.7G.6 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 07. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
G11 Motor cars	9	77.7	Other (price /volume),CF
G12 Motorcycles	1	2.5	Other (price /volume),CF
G13 Bicycles	1	3.3	
G21 Spare parts and accessories for personal transport equipment	10	6.4	HBS,RT,CF
G22 Fuels and lubricants for personal transport equipment	5	31.0	Other (price /volume),CF
G23 Maintenance and repair of personal transport equipment	5	29.1	CF
G24 Other services in respect of personal transport equipment	11	15.8	CF
G31 Passenger transport, short distance	3	8.5	CF
G32 Passenger transport, long distance	4	17.2	Other, CF
G33 Passenger transport, plane	1	17.2	Other, CF
G34 Passenger transport, boat	3	11.5	Other, CF
G36 Removals and furniture storage	3	0.9	CF

5.7H Household consumption - COICOP 08 Communications

5.7H.1 In the NNA, household final consumption expenditure **COICOP 08 is specified in 3 items.** These are 1 item of postal services and 2 items of telecommunications. Breakdown by products is much more detailed. COICOP 08 consists of services, except the smallest item of telecommunications (telephone and telefax equipment).

5.7H.2 Household consumption expenditure of COICOP 08 is estimated at 32.6 billion NOK in 2019, or **0.9 per cent of GDP.** The share in the total household final consumption expenditure (**HFCE**) is **2.2 per cent.**

5.7H.3 Main sources used are:

Household budget surveys
Annual retail trade statistics

5.7H.4 The second source is available for telephone equipment, while the services are estimated using electronic communication services statistics and information on NACE 53 in combination with CF.

5.7H.5 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 08. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
H10 Postal services	1	1.0	CF
H20 Telephone and telefax equipment	2	6.9	HBS,RT, CF
H30 Telephone and telefax services	2	24.7	Other, CF

5.7I Household consumption - COICOP 09 Recreation and culture

5.7I.1 In the NNA, household final consumption expenditure **COICOP 09 is specified in 20 items**. These are 11 items (in three sub-classes) of equipment and accessories, including repair and services, 5 items of recreational and cultural goods and services, 3 items of newspapers, books and stationery, and 1 item of package holidays (regrouped from transport). Breakdown by products is much more detailed. COICOP 09 consists of all three types of durability for consumption goods, and a considerable number of services.

5.7I.2 Household consumption expenditure of COICOP 09 is estimated at NOK 166.4 billion in 2019, or **4.7 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **11.1 per cent** (third in rank among COICOP main groups).

5.7I.3 Main sources used are:

Household budget surveys
Annual retail trade statistics
Sources used for output of various NACE (SBS)

5.7I.4 The last two **sources listed** are used for most items of COICOP 09 in combination. The sources used for estimating output of recreational, cultural and sporting activities (NACE 90 – 93) include cultural statistics, annual reports from theatres, museums, film and cinema, accounting data of the State Broadcasting Company, annual accounts of the nation-wide betting institutions etc.

5.7I.5 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 09. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
I11 Equipment for the reception, recording and reproduction of sound and pictures	6	9.2	HBS,RT,CF
I12 Photographic and cinematographic equipment and optical instruments	2	2.0	HBS,RT,CF
I13 Information processing equipment	3	11.6	HBS,RT,CF
I14 Recording media	7	1.1	HBS,RT,CF
I15 Repair of audio-visual, photographic and information processing equipment	1	0.2	HBS,CF
I21 Major durables for outdoor recreation	9	7.4	HBS,RT,CF
I22 Musical instruments and other durables for recreation	1	1.5	HBS,RT,CF
I23 Repair of recreation durables	2	0.3	HBS,CF
I31 Games, toys and hobbies	6	5.7	HBS,RT,CF
I32 Equipment for sport, camping and open-air recreation	7	8.0	HBS,RT,CF
I33 Gardens, plants and flowers	9	8.9	HBS,RT,CF
I34 Pets	3	4.2	
I35 Veterinary services relating to pets	3	1.7	Other, CF
I41 Recreational and sporting services	9	14.2	HBS,CF
I42 Broadcasting services	19	39.6	HBS,CF
I43 Lotteries, gambling etc.	1	11.9	Output, CF
I51 Books	1	6.1	HBS,RT,CF
I52 Newspapers and periodicals	3	13.7	HBS,RT,CF
I54 Miscellaneous printed matter and stationery and drawing materials	5	1.5	HBS,RT,CF
I60 Package holidays	3	17.5	CF

5.7J Household consumption - COICOP 10 Education

5.7J.1 In the NNA, household final consumption expenditure **COICOP 10 is specified in 4 items.** These are 4 items of education services relating to different levels of education. Breakdown by products is much more detailed. COICOP 10 consists of services, exclusively.

5.7J.2 Household consumption expenditure of COICOP 10 is estimated at 6.4 billion NOK in 2019, or just **0.2 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **0.4 per cent**. Government is dominating in providing education services in Norway.

5.7J.3 **Main source used** is:

Output statistics

5.7J.4 The **source listed** is used for all items of COICOP 10 (see also chapter 3, NACE P).

5.7J.5 **Illustration by 2019 figures** follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 10. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
J10 Pre-primary and primary education	1	0.5	Other, CF
J20 Secondary education	1	1.6	Other, CF
J30 Adult education services	3	1.7	Other, CF
J40 Tertiary education	1	2.7	Other, CF

5.7K Household consumption - COICOP 11 Restaurants and hotels

5.7K.1 In the NNA, household final consumption expenditure **COICOP 11 is specified in 3 items**, one for catering services (restaurants etc.), one for canteens, and one for accommodation services (hotels etc.). Breakdown by products is much more detailed. COICOP 11 consists of services, exclusively.

5.7K.2 Household consumption expenditure of COICOP 11 is estimated at NOK 100.3 billion in 2019, or **2.8 per cent of GDP**. The share in the total household final consumption expenditure (**HFCE**) is **6.7 per cent**.

5.7K.3 **Main sources used** are:

Output statistics (SBS)
Household budget surveys
Accommodation statistics of guest nights

5.7K.4 The first **source listed** is used for both items of COICOP 11, while the third source is used as supporting source for accommodation services.

5.7K.5 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 11. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
K11 Restaurants, cafes and the like	3	71.4	HBS, Other, CF
K12 Canteens	15	12.3	HBS, Other, CF
K20 Accommodation services	3	16.7	HBS, Other, CF

5.7L Household consumption - COICOP 12 Miscellaneous goods and services

5.7L.1 In the NNA, final consumption expenditure of households for **COICOP 12 is specified by 11 items** in terms of purposes of consumption groups - 3 items of personal care, 2 items of personal effects n.e.c., 1 item of social work services, 3 items on financial services (insurance services, FISIM

and financial services n.e.c.), 1 item on prostitution, and 1 item of other personal services. The major part consists of services, but also of all three types of goods.

5.7L.2 In the 2006 main revision, FISIM was allocated to users for the first time and thus was introduced as new product within the COICOP group L62.

5.7L.3 Household consumption expenditure of COICOP 12 is estimated at NOK 153.2 billion in 2019, or **4.3 per cent of GDP**. The share in the total household final consumption expenditure (HFCE) is **10.3 per cent**.

5.7L.4 Main sources used are:

-	Annual retail trade statistics
-	Household budget surveys
-	Local government accounts
-	Social statistics and health statistics

5.7L.5 The two first **sources listed** are used for consumption goods items of COICOP 12, while the other two sources are used for part of the consumption services of this main group (with other sources as well).

5.7L.6 Output statistics of NACE K and the commodity flow method are both utilized for **financial and insurance services**. Estimation of households' consumption expenditures on non-life insurance services is carried out as part of the estimation of output in the insurance industry, see chapter 3.17.20. Output is then distributed to households with fixed weights each year.

5.7L.7 Illustration by 2019 figures follows below by consumption groups and respective main products. See section 5.7A above for explanations and abbreviations.

Household consumption expenditure of COICOP 12. NOK billion. 2019.

<i>COICOP</i>	<i>No. products</i>	<i>HCE value</i>	<i>Sources used</i>
L11 Hairdressing salons and personal grooming	2	17.8	Other, CF
L12 Electric appliances for personal care	1	0.6	HBS,RT,CF
L13 Cosmetic articles, toothpaste, soap etc.	8	21.4	HBS,RT,CF
L20 Prostitution services	1	0.4	Other, CF
L31 Jewellery, clocks and watches	4	3.5	HBS,RT,CF
L32 Other personal effects	8	2.8	HBS,RT,CF
L40 Social protection	11	23.6	Other, CF
L50 Insurance services	3	20.9	Other, CF
L61 Other financial services n.e.c.	5	17.4	Other, CF
L62 Financial Intermediation Services Indirectly Measured	2	35.0	Other
L70 Other services n.e.c.	11	9.9	Other, CF

5.7M Correction items

5.7M.1 Traditionally, two correction items - **direct purchases abroad by residents** (to be added) and **direct purchases in the domestic market by non-residents** (to be deducted)- had a role in the NA system in making global adjustments to the total of individual COICOP-type items first recorded as a **domestic concept** to become a final total of HFCE as a **national concept**. This set-up was kept in Norway in the 1995 revision, although ESA95 sort of assumed to do away with this split.

5.7M.2 No efforts have so far been made to integrate direct purchases abroad by resident households with the detailed HFCE breakdown. Main reason for this - so far - has been that information is lacking on COICOP groups for distributing direct purchases abroad by residents. This distribution may have a different pattern, and the border traffic to Sweden is one important part of this problem issue.

5.7M.3 **Direct purchases in Norway by non-resident households** have, on the contrary, been improved by integrating information on distribution of direct purchase in Norway by non-residents on COICOP groups in a **satellite account for tourism**. One step forward towards the suggested ESA 2010 recording - although implying a quasi-solution between the domestic and national concept - would be to delete the second correction item and deduct non-residents' purchases at the individual COICOP level. Allocating resident households' purchases abroad in a similar way should be investigated for future implementation.

5.7M.4 For the time being the two correction items are still kept in their traditional roles in the NNA.

5.7M.5 The main **sources** behind the two correction items are from 2005 onwards, on the debit side two quarterly surveys conducted by Statistics Norway (one covering day tourism and one travel with overnight stays abroad). They are used as sources in both the BoP statistics and in national accounts. On the credit side, non-residents travel expenditures in Norway, are measured through benchmark estimations based on **visitor statistics** produced by a private institution (earlier Transportøkonomisk Institutt, recently Innovasjon Norge), giving information on number of visitors and information on expenses per head. In the **tourism satellite accounts** established on a current basis, it has been made possible to have a further split of consumption expenditure in the domestic market of Norway: a three-split for **non-tourist residents** - although tourist residents abroad are included as one item, **resident tourists in Norway** and **non-resident tourists in Norway**. The detailed split on COICOP groups described in the previous inventory has been discontinued, and is now on an aggregate level with 10 groups.

5.8 NPISH final consumption expenditure

5.8.1 In the NNA, final consumption expenditure of non-profit institutions serving households (NPISHs) was introduced in the 1995 revision and **specified by 5 items of purposes or functions**. The classification introduced was more or less in line with COFOG (see also chapter 9 on COPNI), while slightly amended during the 2002 main revision.

5.8.2 Final consumption of non-profit institutions serving households (NPISH) is estimated at NOK 85.5 billion in 2019, or **2.4 per cent of GDP**. It consists of various types of services grouped as purposes or functions - in descending order of importance these are religious and humanitarian purposes, welfare, cultural and recreational services, health, and education. No consumption of goods is included.

NPISHs final consumption expenditures, NOK billion. 2019.

	<i>NOK billion</i>	<i>Percentage of GDP</i>
Religious and humanitarian purposes	26.3	0.7
Welfare	24.9	0.7
Cultural and recreational services	16.1	0.5
Health	9.8	0.3
Education	8.5	0.2
Total NPISH consumption	85.5	2.4

5.8.3 Main sources used are:

- Central government accounts
- Local government accounts

5.8.4 The sources used to estimate NPISH consumption expenditure are the **same sources as used for NPISH output**. Sources used for items of deduction are supplementary sources in this context, in particular household budget surveys etc. for **fees** from households in the respective cases. Grants or transfers to NPISHs are recorded in central and local government accounts, thus used as sources indirectly. A more comprehensive discussion of the sources is given in chapter 3 with the output description.

5.8.5 The **Business Register** in Statistics Norway provides a population of NPI units, but it is often difficult to decide whether the NPIs are NPISHs or market NPIs serving businesses. 2008 SNA and ESA 2010 principles are examined in this respect, with NA unit staff being involved in the coding register work as well. As an example, the NPI status in the Business Register was per **2nd June 2015**: 85 881 and 1 915 units respectively out of 1 055 891 units in total. **13th June 2006** the status was: 46 316 units coded as NPISH as against 2 879 units coded as market NPI serving business.

5.8.6 In some cases, there is a **one-to-one correspondence** between output and final consumption expenditure of the NPISHs. More often, fees from households (and/or others) should be deducted from output in order to arrive at NPISH consumption, and in a few cases government purchases from non-government producers - recorded as government final consumption expenditure - might also appear as items for deduction. In the NNA, the latter is assumed not taking place. In estimating NPISH output, the cost approach principle of non-market production is applied like for general government. It implies that estimates of consumption of fixed capital for NPISHs are made as well.

5.8.7 **Illustration by 2019 figures** follows by products, specified by 5 items of function and 18 NNA-products (services). The direct output to consumption correspondence is indicated if not otherwise. Coding prefix 66 is used for NPISH consumption expenditure. For information on how output is estimated, see chapter 3 (relevant sections).

NPISH consumption expenditure. NOK billion. 2019. Sources and methods.

Religious and humanitarian purposes (66 L70)	26.4	
942 000 Services furnished by trade unions	8.4	Determined equal to output (see NNA industry 26 940 in chapter 3)
949 910 Other membership organizations services	17.8	Calculated as output (NNA 26 940) less fees
Cultural and recreational services (66 I40)	7.9	
900 100 Entertainment in theatre, opera, concert halls n.e.c.	6.2	Calculated as output (NNA 26 900) less fees from households and exports
900 200 Support services to performing arts	0.4	Calculated as output (NNA 26 900)
910 000 Library and museums services, botanical and zoological services	1.3	Calculated as output (NNA 26 910) less fees from households
931 200 Sports facilities operation services	8.2	Calculated as output (NNA 26 930) less fees from households and less fees from other units of the sporting activity industry and a few government industries (minor amounts)
Welfare (66 L41)	24.9	
873 020 Nursing and welfare services to old persons and handicapped persons	13.9	Calculated as output (NNA 26 870 less fees from households and less purchases by local government
889910 Child care	4.1	Calculated as output (NNA 26 870 less fees from households and less purchases by local government
889 950 Services from organizations	6.9	Determined equal to output (NNA 26 870) less exports
Health (66 F00)	9.8	
861 010 Hospital services, somatic	4.7	Calculated as output (NNA 26 860) less fees from households and less purchases by local government
861 040 Hospital services, psychiatric	2.2	Calculated as output (NNA 26 860) less fees from households and less purchases by local government
861 060 Hospital services, treatment of drug addiction	2.0	Calculated as output (NNA 26 860) less fees from households and less purchases by local government
861 070 Somatic services, rehabilitation	0.6	Determined equal to output (NNA 26 860)
869 040 Preventive health services	0.3	Determined equal to output (NNA 26 860)
Education (66 J00)	8.5	
851 000 Education services, preschool and primary school	3.7	Calculated as output (NNA 26 850) less fees from households and less purchases by local government
853 000 Secondary education services	2.8	Calculated as output (NNA 26 850) less fees from households
854 200 Higher education services	1.4	Calculated as output (NNA 26 850) less fees from households
855 900 Other education services	0.6	Calculated as part of output (NNA 26 850)

5.9 Government final consumption expenditure

5.9.1 In the NNA, government final consumption expenditure is distinguished in **82 groups of function** within the **framework of 10 main groups**. COFOG is applied as classification for both central government and local government. In total, **53 groups are specified for central government** and **29 groups for local government** (see 5.9.8 below or chapter 9 for more details).

5.9.2 Government final consumption expenditure is **partly produced by non-governmental producers**, in particular market producers. Thus, government consumption expenditure consists of two distinctive parts:

- (i) Goods and services for consumption **produced by general government** itself other than expenditure made by other units (referred to as fees)
- (ii) Purchases by general government of goods and services **produced by market producers** that are supplied to households - without any transformation - as social transfers in kind.

5.9.3 The latter part of social transfers in kind - **purchases by general government in the market for households** - covered 9.9 per cent of government consumption expenditure in 2019. It refers to 49.6 billion in central government consumption expenditure, main items being medicaments, physicians' services and taxi transportation services, and 28.3 billion in local government consumption expenditure, mainly child day-care services, basic medical care and transportation. Thus, this item has a much higher share of central government consumption expenditure than in local government, and the reason for this is arrangements being established through use of the National Insurance Fund. **Main NNA-products** involved - illustrated by 2019 figures - are indicated in the table that follows:

Purchases by general government in the market for households. NOK billion. 2019.

<i>NNA-products</i>	<i>Central government</i>	<i>Local government</i>
212 010 Medicaments	11.3	
291 020 Cars	0.7	
325 000 Medical and orthopaedic equipment	5.2	
493 200 Taxi services, rental services with driver	4.1	0.7
861 010 Hospital services, somatic	1.3	
861 040 Hospital services, psychiatric	1.3	
861 070 Rehabilitation service	2.9	
862 110 Basic medical and diagnostic service	7.1	3.9
862 210 Specialised medical services, specialised physicians	3.4	
862 300 Orthodontic services	2.3	0.1
869 020 Services provided by physiotherapists and other para-medical persons	2.2	
869 060 Laboratory services	2.0	
869 070 Ambulance services	1.4	
889 109 Private kindergarten services		22.8
Other NNA-products	4.4	0.8
Total government purchases in the market	49.6	28.3

5.9.4 Government final consumption expenditure is estimated at NOK 867.7 billion in 2019, or **24.3 per cent of GDP**. It consists mainly of services produced by central and local government, but some few items of goods - mostly medicaments for health purposes - are also involved as part of purchases from market producers as social transfers in kind (see table above). Overall distribution between central government and local government was 40 and 60 per cent, respectively, in 1995 and 2000, but changed to almost 50 -50 in 2005 and onwards. The reason is mainly the central government take-over of hospitals from the local governments sector in 2002.

Government final consumption expenditure. NOK billion. 2019.

	<i>NOK billion</i>	<i>Percentage of GDP</i>
Central government consumption expenditure	424.0	11.9
Local government consumption expenditure	443.7	12.5
Total government consumption expenditure	867.7	24.3

5.9.5 **Main sources used are:**

- Central government accounts
- Local government accounts

5.9.6 The sources used to estimate government final consumption expenditure are the **central and local government accounts**. This means all general government units are covered, taking also into account other central government accounts. Government consumption expenditure is calculated indirectly, deducting fees from household and other sectors and own account investments from output of government production, and adding purchases from other producers. Data for output - measured in terms of costs of production - are available from items by type on the cost side of the government accounts. Government expenses (expenditure side of the government accounts) are coded by type (kind of transaction) apart from by product, by industry, by sector and by COFOG. Data on fees appear on the income side of the government accounts. In addition, according to the principles of ESA 2010, government consumption expenditure also includes government purchases from non-government producers supplied to households without any transformation as social transfers in kind. Data for this additional component are also available in the government accounts. Not covered here is consumption of fixed capital for government, but this is included in the government output (and consumption) estimates through the BERKAP programme described in chapter 4 (see section 4.12 above). Also, FISIM is estimated separately and added to the government accounts data. The coding approach used for all central and local government transactions in the government accounts - referred to in section 3.21 above - also implies that all capital expenditures are identified and excluded from final consumption.

5.9.7 **Central government accounts and local government accounts** are utilized for the estimation of government final consumption expenditure of central government and local government, respectively. In some cases, there is a one-to-one correspondence between output and final consumption expenditure. More often, fees from households (and/or other sectors) are deducted from output in order to arrive at government consumption expenditure. In a few cases, government purchases from non-government producers - recorded as government final consumption expenditure - mean government output is lower than government consumption on particular products.

5.9.8 Government consumption is **illustrated below by 2019 figures** by COFOG groups. There is one table on central government consumption expenditure, another for local government consumption expenditure. Also shown are number of products within each COFOG group (a few of the products are of a technical nature).

Central government consumption expenditure. NOK billion. 2019.

	<i>NOK billion</i>	<i>Number of NNA products</i>
<i>A/01 General public services</i>		
A1/011 Executive and legislative organs, financial and fiscal affairs, external affairs	28.7	4 NNA-products
A2/012 Foreign economic aid	2.2	4 NNA-products
A3/013 General services	6.0	6 NNA-products
A5/015 R&D General public services	0.1	3 NNA-products
A6/016 General public services n.e.c.	1.2	2 NNA-products
A7/017 Government debt management	5.1	1 NNA-product
<i>B/02 Defense</i>		
B1/021 Military defense	47.1	6 NNA-products
B2/022 Civil defense	0.9	5 NNA-products
B3/023 Foreign military aid	1.3	2 NNA-products
B5/025 Defense n.e.c.	1.2	5 NNA-products
<i>C/03 Public order and safety</i>		
C1/031 Police services	17.8	2 NNA-products
C2/032 Fire-protection services	1.2	2 NNA-products
C3/033 Law courts	5.3	5 NNA-products
C4/034 Prisons	4.5	2 NNA-products
C6/036 Public order and safety n.e.c.	1.0	5 NNA-products
<i>D/04 Economic affairs</i>		
D1/041 General economic, commercial and labor affairs	1.9	4 NNA-products
D2/042 Agriculture, forestry, fishing	3.3	3 NNA-products
D3/043 Fuel and energy	1.8	3 NNA-products
D4/044 Mining, manufacturing, construction	0.2	3 NNA-products
D5/045 Transport	23.0	5 NNA-products
D6/046 Communications	0.4	3 NNA-products
D7/047 Other industries	0.2	3 NNA-products
D8/048 R&D Economic affairs	0.1	3 NNA-products
D9/049 Economic affairs n.e.c.	1.1	3 NNA-products
<i>E/05 Environment protection</i>		
E3/053 Pollution abatement	1.8	4 NNA-products
E4/054 Protection, biodiversity, landscape	0.9	3 NNA-products
E5/055 R&D Environment protection	0.6	4 NNA-products
E6/056 Environment protection n.e.c.	0.7	3 NNA-products
<i>F/06 Housing and community amenities</i>		
F1/061 Housing development	0.0	3 NNA-products
<i>G/07 Health</i>		
G1/071 Medical products, appliances and equipment	17.7	11 NNA-products
G2/072 Out-patient services	51.9	18 NNA-products
G3/073 Hospital services	107.7	13 NNA-products
G4/074 Public health services	3.7	3 NNA-products
G5/075 R&D Health	0.2	3 NNA-products
G6/076 Health n.e.c.	3.5	3 NNA-products
<i>H/08 Recreation, culture and religion</i>		
H2/082 Cultural services	4.7	8 NNA-products
H4/084 Religious and other community services	2.6	3 NNA-products
H6/086 Recreation, culture and religion n.e.c.	0.2	3 NNA-products
<i>I/09 Education</i>		

I1/091 Pre-primary and primary education	0.7	6 NNA-products
I2/092 Secondary education	0.3	3 NNA-products
I3/093 Supplementary education	0.0	1 NNA-product
I4/094 Tertiary education	41.6	6 NNA-products
I5/095 Education all levels	0.0	3 NNA-products
I6/096 Subsidiary services to education	1.0	4 NNA-products
I7/097 R&D Education	0.1	3 NNA-products
I8/098 Education n.e.c.	1.4	3 NNA-products
<i>J/10 Social protection</i>		
J1/101 Sickness and disability	1.7	6 NNA-products
J2/102 Old age care	0.1	3 NNA-products
J4/104 Family and children	5.2	6 NNA-products
J5/105 Unemployment	0.4	3 NNA-products
J7/107 Social exclusion n.e.c.	2.8	4 NNA-products
J8/108 R&D Social protection	0.1	3 NNA-products
J9/109 Social protection n.e.c.	17.0	3 NNA-products

Local government consumption expenditure. NOK billion. 2019.

	<i>NOK billion</i>	<i>Number of NNA products</i>
<i>A/01 General public services</i>		
A1/011 Executive and legislative organs, financial and fiscal affairs, external affairs	35.2	2 NNA-products
A3/013 General services	9.9	2 NNA-products
A7/017 Government debt management	2.4	1 NNA-product
<i>C/03 Public order and safety</i>		
C2/032 Fire-protection services	4.4	2 NNA-products
<i>D/04 Economic affairs</i>		
D1/041 General economic, commercial and labor affairs	0.7	2 NNA-products
D5/045 Transport	29.7	4 NNA-products
D9/049 Economic affairs n.e.c.	1.0	2 NNA-products
<i>E/05 Environment protection</i>		
E1/051 Waste management	0.4	2 NNA-products
E2/052 Sewerage	0.4	2 NNA-products
E6/056 Environment protection n.e.c.	1.9	2 NNA-products
<i>F/06 Housing and community amenities</i>		
F1/061 Housing development	1.4	3 NNA-products
F3/063 Water supply	1.3	2 NNA-products
<i>G/07 Health</i>		
G2/072 Out-patient services	15.7	5 NNA-products
G3/073 Hospital services	42.6	4 NNA-products
G4/074 Public health services	6.3	3 NNA-products
<i>H/08 Recreation, culture and religion</i>		
H1/081 Recreational and sporting services	6.2	4 NNA-products
H2/082 Cultural services	9.0	7 NNA-products
H4/084 Religious and other community services	5.4	2 NNA-products
H6/086 Recreation, culture and religion n.e.c.	1.9	4 NNA-products
<i>I/09 Education</i>		
I1/091 Pre-primary and primary education	81.5	3 NNA-products
I2/092 Secondary education	27.1	4 NNA-products
I5/095 Education not definable by level	9.6	5 NNA-products
I6/096 Education services	5.8	3 NNA-products
I8/098 Education n.e.c.	1.4	2 NNA-products
<i>J/10 Social protection</i>		
J1/101 Sickness and disability	62.9	5 NNA-products
J2/102 Old age care	5.3	2 NNA-products
J4/104 Family and children	63.4	7 NNA-products
J6/106 Housing support	0.7	3 NNA-products
J7/107 Social exclusion n.e.c.	6.8	7 NNA-products

5.9.9 Government final consumption expenditure (GFCE) is - in accordance with the ESA 2010 principle - distributed into **collective consumption** and **individual consumption**.

Collective and individual GFCE. NOK billion and per cent. 2019.

	<i>NOK billion</i>			<i>Percentages</i>		
	<i>Total GFCE</i>	<i>GFCE in central government</i>	<i>GFCE in local government</i>	<i>Total GFCE</i>	<i>GFCE in central government</i>	<i>GFCE in local government</i>
Collective consumption	282.0	184.5	97.5	32.5	43.5	22.0
Individual consumption	585.7	239.5	346.2	67.5	56.5	78.0
Total GFCE	867.7	424.0	443.7	100.0	100.0	100.0

5.9.10 **Individual consumption** accounts for **67.5 per cent of government final consumption expenditure in 2019**. This share is quite different in central government and local government, well under 60 per cent of central government consumption expenditure in contrast to almost 80 per cent of local government consumption expenditure. While above 50 per cent of total GFCE is related to local government, the share of individual consumption is 56.5 per cent in local government.

5.10 Acquisitions less disposals of produced fixed assets

Overview

5.10.1 **Gross fixed capital formation (GFCF)** includes both acquisitions less disposals of produced fixed assets and acquisitions less disposals of non-produced fixed assets (see next section 5.12). GFCF has **two main breakdowns**, one by categories or **types of fixed assets** and the other **by kind of activities**, with a cross-classification of the two also published. The first - the breakdown by types of fixed assets - is described in the following paragraphs, while the second breakdown by NACE sections (kind of activities) is described in more detail in the succeeding sub-sections 5.10A - 5.10T below. The way GFCF data are organised in the NNA illustrates the importance given to the breakdown by kind of activities. The activity of capital formation has actually the same standing as the activity of production, specifying more or less the same number of industries in both instances, motivated by the need of symmetric output and capital data in the **analysis of productivity**. It should be underlined that Norway has constructed within the SUT framework a well-developed **cross classification of the GFCF information by industries and types of assets** (see below).

5.10.2 The **GFCF structure of flows** in the NNA contains **three main stages** in the following order:

- (1) **Cross-classification** of industries and type of assets as aggregated products
- (2) **Balancing** of aggregated products for type of assets
- (3) **Cross-classification** of type of assets and ordinary products

5.10.3 In the first stage, **GFCF estimates specified by type of assets** appear as constituent parts of GFCF of each NNA-industry. The **NNA-industries** in this context are structured by type of investor in the same way as the structure applied for output and intermediate consumption by type of producer. There are **5 different types of investors**: market, own final use, non-market of central government, non-market of local government, and non-market of NPISHs. The number of the NNA-industries comes close to the corresponding number of the NNA-industries used for production. The most striking difference is for own use industries, where the industry for owner-occupiers of dwelling services production is the only industry specifying GFCF.

5.10.4 The **GFCF flows by industries** in the first stage are **in terms of aggregated products at the level of types of assets** specified in the NNA. The NNA specification of types of assets is given in chapter 9 (section 9.3). Altogether, 53 types of assets are specified, grouped in 8 main categories.

5.10.5 GFCF types of fixed assets in the NNA are shown by main category and figures for 2019 below.

Gross fixed capital formation by types of fixed assets. NOK billion. 2019

<i>Types of fixed assets</i>	
1 Dwellings	211.3
100 Dwellings and holiday homes	184.0
108 Own-account construction on dwellings	13.0
180 Existing dwellings, transaction costs	14.0
190 Land, transaction costs	0.4
2 Non-residential buildings	127.8
200 Non-residential buildings	120.0
208 Own-account construction on non-residential buildings	1.9
290 Existing non-residential buildings, transaction costs	5.9
3 Other structures	249.9
300 Land improvement in agriculture and forestry	0.3
308 Own-account construction on land improvement in agriculture and forestry	0.4
310 Railways including subways and tramways and bridges	15.1
320 Power supply transmission lines	2.7
330 Other power supply construction	7.9
340 Public roads and streets including bridges	39.6
348 Own account work on public roads and streets including bridges	0.3
350 Other civil engineering works	31.8
358 Own-account construction on other civil engineering works	2.5

370 Construction work for oil and gas extraction	55.1
378 Own-account construction for oil and gas extraction construction work	3.4
380 Oil production platforms and oil drilling rigs and modules	78.4
388 Own-account construction on oil rigs and modules	7.7
389 Removal costs for oil and gas installations	3.9
390 Pipelines for oil and gas	0.7
398 Own-account construction for oil and gas pipelines	0.1
4 Transport equipment	80.7
410 Ships and boats	41.5
420 Aircraft and helicopters	12.4
430 Passenger cars and station wagons	8.8
440 Buses	1.9
450 Vans and lorries and special purpose vehicles	13.1
460 Passenger cars for occupational hire	2.6
470 Locomotives and rolling stock	0.4
5 Other machinery and equipment	136.8
508 Own-account construction on machinery and equipment in manufacturing, mining and quarrying	2.1
510 Agricultural and forestry machinery and equipment	3.3
520 Machinery and equipment in manufacturing, mining and quarrying	24.6
530 Machinery and equipment in electricity plants and gas works	18.1
540 Machinery and equipment in construction	9.7
550 Machinery and equipment in other industries	32.4
560 Computers and office equipment	32.4
570 Telecommunication equipment	4.7
590 Military weapons	9.5
6 Cultivated assets	0.0
610 Livestock for breeding, dairy, draught etc.	0.0
650 Vineyards, orchards and other plantations of trees yielding repeat products	0.0

7 Intangible fixed assets	151.2
710 Mineral exploration	24.0
718 Own-account construction on mineral exploration	2.3
720 Research and development (R&D)	6.1
728 Own-account research and development (R&D)	65.4
740 Computer software	45.4
748 Own-account work on computer software	5.8
760 Literary and artistic originals	1.7
768 Own-account work on literary and artistic originals	0.6
9 Valuables	0.4
990 Valuables, acquisitions less disposals	0.4

5.10.6 In the illustration table, it is not distinguished between acquisition value and **net purchases of existing fixed assets**. For all items, the latter is counterbalanced by a corresponding negative value for other final uses. It includes first of all, (net) sales (exports) of ships, but also some exports of other existing fixed assets. The other important item is disinvestments of existing passenger cars and station wagons for household consumption expenditure, which are assumed to be sold on to the households 3 years after purchase by the producers.

5.10.7 In the second stage, the aggregated products of **fixed asset types are balanced for the supply and use tables**. These aggregated products are - technically speaking - determined from the use side, and their totals are at this stage given a corresponding **notional output**, from which their VAT are separately calculated and identified. An example can clarify this:

<i>Example: Type 100</i>	<i>From the use side NOK billion in 2019</i>	<i>From the supply side NOK billion in 2019</i>
Dwellings and holiday homes	184.0	
Dwellings and holiday homes		184.0
Multi-dwelling houses in basic price		147.2
VAT on multi-dwelling houses		36.8

5.10.8 In the third stage, each of the components of aggregated products (types of assets) - i.e., basic price, VAT - is cross-classified by ordinary NNA-products. For VAT no further flows are arrived at. Flows in basic price, however, are connected to the detailed CPA-based products in the NNA. For buildings and structures these are primarily products of the construction industry, supplemented by real estate services and occasionally manufacturing products (prefabricated buildings). In the example given for multi-dwelling houses, GFCF in basic price is broken down by 15 different characteristic products of the construction industry. Machinery and equipment in other industries is the fixed assets

item which is composed of most products, altogether 39 NNA-products (characteristic products of various manufacturing industries).

5.10.9 The following table presents GFCF by NACE section and type of capital in 2019.

Gross fixed capital formation by industry and type of capital. NOK billion. 2019.

NACE	<i>Type of capital</i>							<i>Total</i>
	<i>Dwellings</i>	<i>Non-residential buildings</i>	<i>Other structures</i>	<i>Transport equipment</i>	<i>Other machinery and equipment</i>	<i>Cultivated assets</i>	<i>Intangible fixed assets and valuables</i>	
A	0	6.6	2.9	4.0	4.4	0	0.9	18.8
B	0	0.5	149.0	0.2	4.5	0	30.0	184.3
C	0.1	3.7	6.0	1.8	24.1	0	14.0	49.6
D	0	2.0	10.9	0.2	19.2	0	3.7	35.9
E	0	0.2	14.5	0.9	1.1	0	0.8	17.5
F	1.0	9.1	0	5.1	10.0	0	2.1	27.3
G	0.2	1.9	0	3.9	9.5	0	8.3	23.9
H	0.1	3.7	1.0	42.1	2.9	0	2.8	52.6
I	0.2	0.7	0	0.2	2.1	0	0.4	3.6
J	0	1.2	1.6	0.5	11.8	0	20.5	35.5
K	0	2.1	0	1.0	5.2	0	6.9	15.3
L	203.5	36.0	0	0.3	1.9	0	1.1	242.8
M	0.2	0.6	0	-0.5	3.1	0	15.7	19.2
N	0.2	0.3	0	5.2	5.3	0	2.5	13.5
O	5.8	15.6	62.6	14.3	16.4	0	10.6	125.3
P	0	19.9	-0.1	0.1	3.0	0	22.7	45.6
Q	0	19.6	0	0.3	8.1	0	7.4	35.3
R	0	2.3	1.4	1.0	2.9	0	0.9	8.5
S	0	1.9	0	0.4	1.3	0	0.2	3.7
T	0	0	0	0	0	0	0	0
Total	211.3	127.9	249.8	81	136.8	0	151.5	958.2

5.10.10 GFCF by institutional sector and type of asset are presented in the following table.

Gross fixed capital formation by sector and type of capital. NOK billion. 2019.

Sector	Type of capital							Total
	Dwellings	Non-residential buildings	Other structures	Transport equipment	Other machinery and equipment	Cultivated assets	Intangible fixed assets and valuables	
S.11	8	71.1	168.8	62.7	98.9	0	102.6	512.1
S.12	0	-0.2	1	0.1	7.4	0	6.9	15.2
S.13	5.8	51.9	76.4	14.9	24.8	0	40.4	214.2
S.14	197.5	1.3	2.2	3.2	3	0	0.4	207.6
S.15	0	3.8	1.4	0.1	2.7	0	1.1	9.1
Total	211.3	127.9	249.8	81	136.8	0	151.4	958.2

Main data sources

5.10.11 **Main sources used** for the estimation of gross fixed capital formation are **mostly industry-oriented sources** and most often the same sources that are used for the estimation of output of the respective industries. More systematically, these sources are referred to in the second part of the GFCF description below. The **SBS** main data (NO), supplemented by data from the supplementary questionnaires (TS), are now the main source for all industries covered. Also, the **R&D statistics** should be mentioned here and are explained more in detail below.

5.10.12 Since the SBS was introduced in the late 1990's, the statistics, including data on GFCF, have gradually improved. The improvements are mainly the extended scope of the SBS and the supplementary data, but there have been also improvements to the statistical methods used for estimating the figures, mainly in the grossing up procedures used. It is thus fair to say that in most cases **direct estimation following the expenditure approach is the main national practice** in this context. However, there are certain industries - in particular among the service industries - where industry-based information on GFCF is more uncertain and thus in practical work, the **estimation of GFCF is an interplay between various approaches and methods**, and in particular the **commodity flow method** has a role to play in this context.

5.10.13 The two main **alternative sources** to the expenditure-based information obtained from the various investors (industries) are:

- | |
|--|
| - Construction statistics |
| - External trade statistics on imports of fixed assets |

5.10.14 As emphasized in the output section, **construction statistics** play a much more direct role for the compilation in the NNA than before. Obviously when this applies to output, the same works for the overall estimation of GFCF in **buildings and structures**. However, reflecting the extensive availability of industry-based information when deciding upon the classification for GFCF by type of

fixed assets, a majority of the items of buildings and structures in fact are approached from industry-related GFCF information. **Dwellings** as well as **office and commercial buildings**, however, seem to be dependent upon construction statistics in a vital way in their estimation.

5.10.15 Fixed assets for which GFCF is approached from the **external trade statistics**, include those items that are mainly imported, i.e., **ships and boats, aircraft and helicopters** and **passenger cars and station wagons**. For ships and boats, and for aircraft and helicopters, just a few industries are involved. Industry-based information has however until recently been relatively poor in spite of this, and the GFCF estimation has therefore relied upon utilization of import data from the external trade statistics. The availability of the SBS for the relevant industries has however changed this situation. Now reports on GFCF for those industries are used in addition to the commodity flow method, although due caution should be taken because of a rather high degree of uncertainty in the industry information. For passenger cars and station wagons, and for vans and lorries and special purpose vehicles as well, a long range of industries are involved for GFCF. In these cases, special calculations have been carried out by utilizing a cross-classified material on types of fixed assets and industry groups.

5.10.16 For investments in buildings (and land), a **transaction cost** is estimated. For other capital goods (ships etc.), no estimation of transaction costs is done, since we do not know whether these costs (brokers fees etc.) are already included in the purchasers' price or not. On time of recording of GFCF, see section 5.3 above. The assumption on work being contracted is considered valid for the Norwegian situation in general.

5.10.17 Three main types are specified in the NNA concerning intangible fixed assets, i.e., mineral exploration, computer software, and research and development (R&D). Own-account construction on mineral exploration is separated from mineral exploration proper. **Mineral exploration** has in the NNA always been treated as gross fixed capital formation, never as intermediate consumption (current expenses). Oil and gas activity statistics - described elsewhere in the Inventory - provide data on quarterly basis (see chapter 10). More details are given in section 5.10B below.

5.10.18 **Computer software** and large databases became GFCF with the main revision when implementing ESA95. This definitional change was implemented in the 1995 revision to the extent data were in fact available at that time. That meant an underestimation caused by lacking data for part of the economy, e.g., for non-market units (government etc.). Hence, no additional consumption of fixed capital related to these units was covered. **In the 2002 revision**, new estimates were made, both for purchased software and software developed on own account. In the **2006 main revision**, source data were further developed through questions on the additional form part of the SBS. As from 2005 data for **own account work on ICT in general government** became available through separate surveys on ICT costs in general government. Data from these surveys have been gradually introduced in the NNA from 2005. **Computer** software is estimated as GFCF at NOK 42.5 billion in 2019, or 1.2 per cent of GDP, of which 5.8 billion is own account developed software.

5.10.19 When looking at the NA time series, it is seen that GFCF on software has increased considerably, which partly reflects the real situation and partly caused by improved data capture. The latter improvement is particularly due to upgrading introduced in the basic statistics (new items in questionnaires, recoding of existing ones, etc.), including the accounting-based SBS. The sources of data on computer software are generally the same as used for output and intermediate consumption by industries.

5.10.20 Strategy has thus so far been to capture what information is available and implement this in the NA that revealed a number of "holes" with no adjustments to them being made. Meanwhile, basic statistics by industries have been reorganized so as to incorporate this information, and from this development coverage has been enlarged significantly. The SBS data have been looked into and investigated further, keeping in mind the 15 recommendations list from Eurostat.

5.10.21 **R&D** was introduced as fixed capital in the 2014 main revision, in accordance with ESA 2010 (see also chapter 3.19). Previously expenditures on R&D were recorded as current expenditures, implying also that own account R&D was not taken into account as production and investments. According to ESA 2010 both own account activities on R&D and purchased R&D are to be recorded as investments. The estimations are based on several sources, in particular SN's Statistics on Technology and innovation and the surveys conducted by the Nordic Institute for Studies in Innovation, Research and Education (NIFU). The value of the estimated output of own account produced R&D services in each industry is added to the total output values given by the various sources, including the NO based SBS. The income from R&D services rendered to others is included in NO 3900. Expenditures on R&D are assumed to be part of the item NO 7700 'Other operating expenses'. The estimated value of purchased R&D services is for each industry subtracted from the value of the item NO 7700 when intermediate consumption is calculated, so that double accounting is avoided.

5.10.22 **Own account investments in R&D** are estimated as part of the output estimations. When output of marketed R&D has been estimated, total investments of marketed R&D can be estimated by:

- Adding imports of R&D;
- deducting exports of R&D;
- deducting product subsidies on R&D to reach purchasers' value;
- deducting other use of R&D (in practice R&D as part of capitalised exploration costs in petroleum activities); and

Thus, total capital formation of R&D in domestic units is reached. The distribution by detailed industry is however a bit trickier. For market activities the R&D statistics give information on purchase and sales. Information from the NIFU statistics on the government financing of the Research institutes is used as an indicator on the sales of R&D to the general government. Thus, net purchases in market activities and general government are known, and net purchases in the Research institute sectors can be found by deducting the two other sectors from the total.

5.10.23 The **stock of R&D capital** for each industry and by the end of each year is estimated using a standard PIM model. Consumption of fixed R&D capital is estimated using a geometric model, assuming an average service life of 10 years of the capital. In estimating the time series, the stock value is set at zero for the year 1970. The price index used in the estimations of time series of consumption of capital and the capital stock is the price index for output of R&D in the R&D industry (NACE 72). The same price index is used for exports and imports of R&D and for market output of R&D in general government. To reach the price index on the market value of the capital formation in R&D, product subsidies must be added to the basic value of the output of the industry.

5.10.24 The following tables show figures for the supply and use of R&D in the Norwegian NA for the years 2019.

Annual R&D expenditures in the statistics and output in NA. NOK million. 2019.

<i>Period</i>	<i>2019</i>
Total R&D-exp. (R&D-statistics) ¹	76830
Exp. on investments (R&D-statistics) ¹	-5456
CFC on capital used in R&D-production	6583
Capital income (mark-up) on R&D	3117
Other subsidies R&D-production	-5034
Adjustment for own account investments in software	-1408
Adjustment for exhaustiveness	2198
Output of R&D in NA	76 953
Of which: output of own account investment in NA	65 367

Note 1: Figures from NIFUs statistical base.

Annual supply of R&D services in NA. NOK million. 2019

<i>Period</i>	<i>2019</i>
Marketed R&D	
Output in market activities, NPIs and private institutes	10 034
Output of market R&D in general government	1 552
Imports of R&D (source: BoP)	3 619
Total supply of marketed R&D at basic value	15 205

<i>Own account R&D investments</i>	
Output own account investments for own purposes	65 367
Total supply R&D services basic value	80 572

Annual use of R&D services in NA. NOK million. 2019

<i>Period</i>	<i>2019</i>
<i>Marketed R&D</i>	
Total supply (=total use) at basic value	15 205
+ Product subsidies R&D	-5 084
= Total use of marketed R&D at purchasers value	10 121
- Exports (from BoP)	3 983
- used in petroleum exploration	40
= Investment R&D capital	6 098
<i>Own account investment R&D</i>	
Investment R&D capital	65 367
<i>Memo:</i>	
Total investment R&D capital	71 465

5.10.25 Other intangible fixed assets were estimated as part of the **2011 main revision**, involving 4 NNA market producing industries: Publishing, Motion picture, TV and music activities, Radio- and TV broadcasting, and Artistic and entertainment activities. In Publishing, costs related to purchase of originals are reallocated from intermediate consumption to gross fixed capital formation. The same takes place within Motion picture etc. activities and Broadcasting activities, but here also own account production of originals related to motion picture production is introduced. For Artistic and entertainment activities, own account production of originals and gross fixed capital formation is introduced. The **sources** used for the new estimations are partly new interpretations of existing sources, i.e., the SBS, and partly use of new sources in particular for Artistic and entertainment activities, i.e., Performing Rights Society. With reference to the OECD Handbook on Deriving Capital Measures of IIPs (2010), various methods in estimating the values are used, depending on the information available for the relevant activities. In 2019 investments in literary and artistic originals amounted to about 30 per cent of the total GFCF in the NACE 580 – 600.

5.10.26 As stated earlier, gross fixed capital formation by industries has somewhat more attention in Norway than the alternative breakdown by types of fixed assets. The next paragraphs therefor describe in more detail the sources used for the estimations of GFCF by industry groups.

Gross fixed capital formation by industry

5.10A GFCF - NACE A. Agriculture, forestry and fishing

5.10A.1 **Investment activities of NACE A** are distinguished by **6 industries** on 3-didgit level, two for agriculture, two for forestry and logging, and two for fishing. Investments in hunting, trapping and game propagation are assumed to be non-existent or included in agriculture. The same applies to agricultural production for own consumption. Services incidental to both agriculture and forestry and logging, however, contain investment activities.

5.10A.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 18.8 billion in 2019, or **0.5 per cent of GDP**. In agriculture, most important types of fixed assets are non-residential buildings and machinery and equipment. Separate estimates are made for land improvement, and for changes in livestock for breeding, dairy, draught etc. In fishing, most important types of fixed assets are fishing boats, while no particular type is the more dominant one in fish farming.

NACE A. Gross fixed capital formation. 2019

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
01	Crop and animal production, hunting and related service activities	8.0	0.2
02	Forestry and logging	1.4	0.0
03	Fishing	2.4	0.1
03	Aquaculture	7.0	0.2
NACE A		18.8	0.5

5.10A.3 **Main sources used** are:

- Aggregate account of agriculture, compiled by Budgeting Committee for Agriculture
- Forestry statistics and aggregate account of forestry, compiled by Statistics Norway
- Annual manufacturing statistics
- Annual census data of fish farming
- Directorates of fisheries data on vessels and engine

5.10A.4 **Aggregate account of agriculture** - as for production - is almost an exhaustive source for estimating GFCF in agriculture. Other sources used are limited to aggregate account of the reindeer industry, and in some cases ad hoc calculations are made. The following tables of the BCA Aggregate account are used for the GFCF estimation in agriculture:

Tab.5.10	Income from transport
Tab.5.11	Own-account construction
Tab.5.25	Gross fixed capital formation

The first of these – income from transport – refers to imputed income to farmers related to investment, i.e., land improvements in agriculture and forestry.

5.10A.5 Various information in the **forestry statistics** publication of Statistics Norway serve as source material for forestry and logging, in particular information relating to silviculture and forest roads. The aggregate account of forestry provides a table on incomes and expenditures that are used and recoded for compiling GFCF estimates for forestry and logging.

5.10A.6 **Manufacturing statistics** provide data on fishing boats domestically produced, while external trade statistics supplement this kind of information by exports and imports data. Another supplementary source is information from the Directorates of fisheries. For fish farming, investments data comes from the Directorates of fisheries.

5.10A.7 For agriculture, the GFCF estimates are very close to those given in the main source of BCA Aggregate account. Minor corrections occur only, similar to those listed in the output section. **Fishing boat** investments are made from **commodity flow** considerations, taking into account output extracted from manufacturing statistics and imports and exports from external trade statistics. Major rebuilding of fishing boats is also added, based on information from the Directorates of fisheries. **Annual census** data are used in estimating GFCF in **fish farming**. Fishing activities for own consumption has no investments because the separate industry producing goods for own consumption is production within households only. When a household buys for example a boat for fishing, this is classified as household consumption and not as investment. Production for own consumption among the professional farmers/fishermen could use capital assets. If so, these investments are included in GFCF of their industry.

5.10B GFCF - NACE B. Mining and quarrying, in particular: Extraction of crude petroleum and natural gas

5.10B.1 **Investment activities of NACE B** are distinguished by **6 industries**. These are the same industries as specified for the production activities of NACE B.

5.10B.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 184.3 billion in 2019, or **5.2 per cent of GDP**, and of which 182.2 billion relates to the two oil and gas industries, i.e., the extraction of oil and gas and services incidental to oil and gas extraction. In oil and gas extraction, most investments are other structures that are specified in several items. Intangible fixed assets are also significantly represented, i.e., mineral exploration. GFCF in the oil and gas extraction industries can fluctuate rather significantly from year to year.

5.10B.3 In the oil and gas extraction industry, the accruals principle in the valuation of GFCF is employed, i.e., costs in constructing production platforms and structures are recorded as GFCF on a continuous basis. Also, in the services incidental to oil and gas extraction industry, GFCF in movable exploration and drilling rigs are recorded according to the accrual principle.

NACE B. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
05, 07-08	Mining and quarrying	2.1	0.1
06	Oil and gas extraction	178.0	5.0
09	Service activities incidental to oil and gas	4.2	0.1
NACE B		184.3	5.2

5.10B.4 Main sources used are:

- Oil and gas activity statistics
- Manufacturing statistics

5.10B.5 Oil and gas activity statistics and manufacturing statistics – SBS based - both belong to the main sources used in Norwegian national accounts. From the former source, data on gross fixed capital formation are collected on a quarterly basis. Eight different statistical forms are used in this case (different from the five different forms used for production, see 3.8.8):

<i>Form</i>	<i>Activity-related area</i>	<i>NACE and NNA-activity</i>
A	Supporting activities, pipeline transport	NACE 49.5 – 495
I	Investments at fields in production	NACE 06 – 060
K	Licensee activity	NACE 06 – 060
L	Drilling for oil etc.	NACE 06 – 060
R	Pipeline transportation	NACE 49.5 – 495
T	Investments, terminals	NACE 06 – 060
U	Field development	NACE 06 – 060
S	Licensee-costs, including exploration and studies	NACE 06 – 060

5.10B.6 With respect to oil exploration (form S), exploration covers the activity from when the production license is given until the exploration programme is finished, or the license is returned. All current costs in exploration and field development, including production drilling, are regarded as investment costs. Specific items in the basic source are covered, which include exploration costs and wages to own employees etc.

5.10B.7 The **quarterly oil and gas activity statistics on investments** are used in estimating GFCF in the oil and gas extraction activities. When the accruals basis of valuation was adopted in the NNA, no difference appeared between values recorded in the NNA and in the oil and gas activity statistics, except a small deviation in the treatment of one particular tax on crude petroleum and natural gas production. **Foreign ownership adjustment to oil and gas fields** is made for those fields located partly in Norway and partly abroad (the United Kingdom) when operated by Norwegian resident producers (and vice versa). Accordingly, the UK and Norway share the ownership to the resources, and income and costs are distributed between the countries according to the ownership share. Suppose the fields in concern are operated by Norwegian companies from the Norwegian territory, the way this situation is solved in the NNA and BoP is that the total investment costs are initially debited to the Norwegian extraction industry and subsequently UK is debited according to its share, shown as exports of existing assets to the UK. By this way, Norway is debited with investments cost according to its ownership share only. Correspondingly, the current operating costs are at first hand debited to Norway, and secondly Norway is credited with an export of services to be interpreted as “payment”

for operating the UK part of the field. On the resource side, only the income corresponding to the Norwegian ownership share is credited to Norway as output of oil and gas. This way of solving the joint ownership problem was agreed between Statistics Norway and the UK statistical office in meetings in the mid-1970s.

5.10B.8 Data on gross fixed capital formation in **manufacturing statistics (SBS)** are used as the basis for the NNA estimation in (other) **mining and quarrying**. Figures are quite small and should not need further explanations.

5.10C GFCF - NACE C. Manufacturing

5.10C.1 **Investment activities of NACE C** are distinguished by **44 industries**. It means same level of industry details as for production.

5.10C.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 49.6 billion in 2019, or **1.4 per cent of GDP**. In manufacturing, most types of fixed assets are represented.

NACE C. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
10-12	Manufacture of food products, beverages and tobacco products	10.5	0.3
13-15	Manufacture of textiles, wearing apparel and leather products	0.3	0.0
16	Manufacture of wood and wood products, except furniture	1.5	0.0
17	Manufacture of paper and paper products	1.7	0.0
18	Printing and reproduction of recorded media	0.4	0.0
19-21	Refined petroleum, chemical and pharmaceutical products	10.5	0.3
22	Manufacture of rubber and plastic products	1.2	0.0
23	Manufacture of other non-metallic mineral products	1.9	0.1
24	Manufacture of basic metals	5.4	0.2
25	Fabricated metal products, except machinery and equipment	3.1	0.1
26	Manufacture of computer, electronic and optical products	3.1	0.1
27	Manufacture of electrical equipment	1.6	0.0
28	Manufacture of machinery and equipment n.e.c.	2.4	0.1
29	Manufacture of motor vehicles, trailers and semi-trailers	0.8	0.0
30	Building of ships, oil platforms and modules	1.9	0.1
31-32	Manufacture of furniture	1.1	0.0
33	Repair and installation of machinery and equipment	2.0	0.1
NACE C		49.6	1.4

5.10C.3 **Main sources used** are:

- Manufacturing statistics (SBS)

5.10C.4 Gross fixed capital formation in manufacturing industries is estimated on the basis of GFCF data provided by the SBS-based **manufacturing statistics**. GFCF is defined as total of investments in **buildings and structures, transport equipment, and other machinery and equipment**.

5.10C.5 As explained in the discussion of the SBS as a source of IC, part of the current expenditures for equipment and machinery is **reclassified** as GFCF in order to adjust for the different size requirements inherent in the definition of GFCF. The adjustments are done explicitly on selected items of the Income Statement (NO) and Supplementary Form (TS), see chapter 5.4.2 for detailed estimations.

5.10D GFCF - NACE D. Electricity, gas, steam and hot and water supply

5.10D.1 **Investment activities of NACE D** are on a 3-digit level distinguished by **4 industries**. It means the same level of industry details as for production. Like for production, separate GFCF estimates are calculated for each of the two electricity items.

5.10D.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 35.9 billion in 2019, or **1.0 per cent of GDP**. Most important investment assets in electricity are electricity plants and machinery and equipment for the electricity industry.

NACE D. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
35	Electricity, gas, steam and air conditioning supply	35.9	1.0
NACE D		35.9	1.0

5.10D.3 **Main sources used** are:

- Annual electricity statistics
- Local government accounts

5.10D.4 **Annual electricity statistics** provide data on GFCF along with data on production etc. Gross fixed capital formation in **electricity production** is estimated on the basis of GFCF data provided by the **electricity statistics**. The district heating statistics provide separate items for the GFCF estimate of steam and hot water supply.

5.10E GFCF - NACE E. Water supply, sewerage, waste management and remediation activities

5.10E.1 **Investment activities of NACE E** are distinguished by **4 industries**. It means the same level of industry details as for production.

5.10E.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 17.5 billion in 2019, or **0.5 per cent of GDP**. Most important investment assets are other constructions and other machinery.

NACE E. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
36	Water collection, treatment and supply	6.8	0.2
37-39	Sewerage	10.7	0.3
NACE E		17.5	0.5

5.10E.3 Main sources used are:

- SBS for NACE 36 – 39
- Local government accounts NACE 36 – 38

5.10E.4 Local government accounts are important particular for the estimation of GFCF in **water supply** and in **sewerage** activities.

5.10E.5 For **market producers**, GFCF are estimated using the model based on the SBS, see chapter 5.4.2.

5.10F GFCF - NACE F. Construction

5.10F.1 Investment activities of NACE F are distinguished by **4 industries** on most detailed level. It means same level of industry details as for production. However, no specific investment activities are specified for construction activity for own final use and for non-market construction activity of local government.

5.10F.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 27.3 billion in 2019, or **0.8 per cent of GDP**. Most important investment assets in construction are non-residential buildings and other machinery and equipment (item for machinery and equipment in construction).

NACE F. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
41-43	Construction	27.3	0.8
NACE F		27.3	0.8

5.10F.3 Main source used is:

- Annual accounting statistics for construction (SBS).

5.10F.4 The annual SBS-based **construction statistics** is utilized for the estimation of GFCF in the construction industry, see chapter 5.4.2 for more details. For the allocation of the three GFCF items of the construction statistics on more detailed NNA types of assets, various distributions have been assumed.

5.10G GFCF - NACE G. Wholesale and retail trade; repair of motor vehicles and motorcycles

5.10G.1 **Investment activities of NACE G** are distinguished by **3 industries**. It means same level of industry details as for production.

5.10G.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 23.9 billion in 2019, or **0.7 per cent of GDP**. Most important investment assets in wholesale and retail trade are non-residential buildings, transport equipment and in particular other machinery and equipment (*inter alia*, computers and office equipment). Net sales of cars (disinvestments) also play a significant role.

NACE G. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
45	Wholesale and retail trade and repair of motor vehicles	4.0	0.1
46	Wholesale trade, except of motor vehicles	12.2	0.3
47	Retail trade, except of motor vehicles	7.8	0.2
NACE G		23.9	0.7

5.10G.3 **Main source used** is:

- Annual accounting statistics, SBS-based

5.10G.4 While **annual accounting SBS-based statistics** is the **main source**, two important supplementary sources of information are also utilized for the NACE G estimation:

- | |
|---|
| <ul style="list-style-type: none">- Buildings statistics- Register of vehicles and the publication “Car and road statistics” from the Directorate of Roads |
|---|

5.10G.5 **Annual building statistics** (also monthly figures) provide information on buildings completed and started and buildings under construction as per end of period. The Ground Property, Address and Building Register (GAB) is a computerised register containing information about all ground properties and addresses in Norway, also on all buildings under construction per end of period and all buildings that have been built or changed since beginning of the last period. The register specifies various types of buildings, for which there are figures available on numbers and utility floor space in square metres. Commercial buildings are the item of type closest to non-residential buildings in wholesale and retail trade.

5.10G.6 The **register of vehicles** and figures available in “**Car and road statistics**” are specified and cross-classified by types of vehicles and broad user groups. Among the user groups is one industry group comprising wholesale and retail trade and financial intermediation (banks, insurance companies etc.).

5.10H GFCF – NACE H. Transportation and storage

5.10H.1 **Investment activities of NACE H** are distinguished by **13 industries**. It means same level of industry details as for production.

5.10H.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 52.6 billion in 2019, or **1.5 per cent of GDP**. Most important investment assets are transport equipment, including acquisitions less disposals of existing ships and aircraft. The remaining is mainly distributed on structures (mostly pipelines), other machinery and equipment, and non-residential buildings.

NACE H. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
49	Land transport, except transport via pipelines	5.4	0.1
49	Transport via pipelines	0.8	0.0
50	Ocean transport	25.1	0.7
50	Inland water transport and supply	11.7	0.3
51	Air transport	2.4	0.1
52	Warehousing and support activities for transportation	6.5	0.2
53	Postal and courier activities	1.1	0.0
NACE H		52.6	1.5

5.10H.3 **Main sources used** are:

- Annual accounting statistics (SBS)
- Annual statistics of oil activities
- Annual and quarterly accounting data of SAS

5.10H.4 **Annual accounting-based statistics (SBS)** were introduced in the NNA in the 2002 main revision. This source is used for all industries of NACE H, except for petroleum pipeline transport.

5.10H.5 The quarterly **statistics of oil activities** are used to estimate GFCF in **pipeline transport**. Items from both the A-form and the R-form constitute the basis for the GFCF estimate. Two types of assets are involved - both pipelines - the own-account construction part shown separately.

5.10H.6 GFCF in **water transport** consisted earlier of ships and boats exclusively and the estimation was based on the **commodity flow approach**, i.e., total investment in ships and boats was determined from the supply side and distributed for the relevant uses. After the SBS for water transport companies became available however, a combination of the commodity flow approach and the reported industry data has been used in the estimations. The supply figures are available by products (type of ships), which helps the allocation work to GFCF in ocean transport, inland water transport, fishing and other industries. For instance, investment in passenger ships (or ferries) in ocean transport is determined as total supply (less exports) of passenger ships (or ferries) less investment in such ships and ferries in inland water transport, as other users are unlikely. Rebuilding of ships is also taken into account (on a weak basis). The external trade statistics include data on exports of existing ships. It is assumed that the total amount is taken (negatively) from GFCF in ocean transport, i.e., not affecting GFCF in inland

water transport. GFCF in inland water transport is partly determined from the SBS-data, and particularly distributed by type of fixed assets.

5.10H.7 For **air transport**, sources are the same as for output, i.e., **accounting data of SAS and SBS-data for other air transport companies**. The GFCF estimate is arrived at by using 2/7 of total capital outlays of SAS, adding total capital outlays of other Norwegian air transport companies. Exports of existing aircraft recorded in external trade statistics are deducted. There is also adjustment made by item for change in ownership. Ownership structure has been changed in the SAS consortium and adjustments are made in that respect. The old 2/7 share approach for SAS is still followed and integrated with new SBS data.

5.10I GFCF - NACE I. Accommodation and food serving activities

5.10I.1 **Investment activities of NACE I** are distinguished by **2 industries**. It means same level of industry details as for production.

5.10I.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 3.6 billion in 2019, or **0.1 per cent of GDP**. Single most important investment assets are non-residential buildings.

NACE I. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
55-56	Accommodation and food service activities	3.6	0.1
NACE I		3.6	0.1

5.10I.3 **Main sources used** are:

- Annual accounting statistics (SBS)

5.10I.4 While **annual accounting SBS-based statistics** is the main source, **annual construction statistics** are relevant for the most important component of GFCF - buildings in hotels and restaurants. Items for hotels and restaurants as project and for various installations work in the hotels and restaurants are available from the construction statistics. The register data on vehicles (car and road statistics) might be seen as a supplementary source even in this case.

5.10J GFCF - NACE J. Information and communication

5.10J.1 **Investment activities of NACE J** are distinguished in **6 industries** as for production.

5.10J.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 35.5 billion in 2019, or **1.0 per cent of GDP**. The most important investment assets are machinery and equipment for telecommunications and IT- and office equipment.

NACE J. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
58	Publishing activities	5.4	0.2
59-60	Motion picture and video programme production, broadcasting	2.2	0.1
61	Telecommunications	12.2	0.3
62-63	Computer programming and related activities	15.7	0.4
NACE J		35.5	1.0

5.10J.3 Main sources used are:

- Annual accounting statistics (SBS)

5.10J.4 For all industries the principal source SBS is used to estimate GFCF. Total figures distributed on main types of fixed assets are estimated from the general approach. For distribution on some detailed assets, additional information is used.

5.10K GFCF - NACE K. Financial intermediation

5.10K.1 Investment activities of NACE K are distinguished by **7 industries** on the most detailed level, 3 industries of financial intermediation, 3 industries of insurance and pension funding, and 1 auxiliary services industry.

5.10K.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 15.3 billion in 2019, or **0.4 per cent of GDP**.

NACE K. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
64	Financial service activities, except insurance and pension funding	10.5	0.3
65	Insurance, except compulsory social security	3.8	0.1
66	Activities auxiliary to financial services and insurance activities	1.0	0.0
NACE K		15.3	0.4

5.10K.3 Main sources used are (same as for production):

- Credit market statistics, accounting data organized in database for banks
- Credit market statistics, accounts of insurance companies and pension funds
- Credit market statistics, accounts of other financial institutions

5.10K.4 The **credit market statistics** have been utilized to estimate GFCF of financial intermediation. Data are extracted by using catalogues for recoding, creating input files for further processing into a final data base from which the NNA estimates are taken. No particular problem appears in breaking down on types of assets required in the NNA.

5.10K.5 According to the **principles**, the treatment of foreclosures and repossessions of goods by creditors should not be treated as uncompensated seizures but as transactions, disposals by debtors and acquisitions by creditors. This is a problem under discussion, for instance whether to treat this differently in the context of sector accounts than in the context of GFCF by industries.

5.10L GFCF - NACE L. Real estate activities

5.10L.1 **Investment activities of NACE L** are distinguished by **2 industries**, of which one covers owner occupied dwellings.

5.10L.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 242.8 billion in 2019, or **6.8 per cent of GDP**. Most important investment assets are dwellings, while the remaining is distributed on most other main types of fixed assets.

NACE L. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
68	Real estate activities	242.8	6.8
NACE L		242.8	6.8

5.10L.3 **Main sources used** are:

- Annual business statistics (SBS)
- Building statistics
- Index of building costs and price index of new dwellings
- Central and local government accounts

5.10L.4 **GFCF in dwellings** consists of completed dwellings, work-in-progress in dwellings when a contract of purchase exists, and own-account construction of dwellings. In practice it is assumed that all dwelling output is allocated to intermediate consumption and GFCF (plus a small amount to exports), while nothing is recorded as work-in-progress (changes in inventories). Also included is an estimate of transaction costs related to sales and purchases of new and used dwellings. Dwellings also include holiday homes and garages related to dwellings. GFCF of dwellings above also includes a separate estimate of the transaction costs of land for industry 688.

5.10L.5 **GFCF in new dwellings** is projected from a benchmark year (2007) using indicators from the building statistics. The indicator used is the average of finished and started dwellings measured in square metres. Separate projections are made for dwellings and holiday homes (including garages and other buildings for household use). These quantity indices are combined with price index for GFCF of new dwellings in order to compile GFCF in current prices. The price index used is the one for GFCF of dwellings in the quarterly accounts, which is based on a combination of the price index of new detached dwellings and the building cost index. The index is checked against the price index produced by the annual accounts and updated if necessary.

5.10L.6 The benchmark estimate for 2007 was estimated indirectly using prices for new dwellings that were collected for the purpose of providing weights for the price index for new dwellings. These price data were given for dwellings in three categories of buildings. VAT was added for the household investments. The number of observations was small, however. These data indicated higher values for the new detached houses than in the former accounts, whereas data for block of flats were comparable to the former national accounts estimates. On this evidence we increased the investment in new detached and small houses of dwellings by 10 billion NOK, keeping GFCF of blocks of flats unchanged. Holiday houses and garages were assigned 67 percent of the value of new dwellings. This resulted in a small upwards revision, which seems likely in light of discussions in the media at the time. More detailed data for real estate agents were taken into account. The estimate of the value of major improvements from the project data in the building statistics was taken in, adjusted for intermediate consumption and for major improvements in leisure homes and letting of dwellings within other industries. No new evaluation of household own account investment activities could be done.

5.10L.7 **Household own account investment work** are added in the NNA to estimate output in construction as described in the output section, and the adjustments are proved necessary to apply to the NNA definitions.

5.10L.8 Major repairs/improvements are not specified in the fixed asset classification, but from the **2002 revision** onwards a special addition is made to the capital formation as compiled by using the indicators from building statistics. This addition is based on an assessment of the construction statistics. In these statistics, there are data by type of project, and repairs and major improvements for investment purposes are one of the specified projects. The split between repairs and major improvements are taken from the previous year.

5.10L.9 The final GFCF estimate for dwellings is subject to reconciliation contrasting supply and demand for products from the construction industry. This reconciliation also takes into account uses for intermediate consumption as well as supply from other relevant industries.

5.10L.10 There is also a separate compilation of costs of ownership transfers in property. The production of estate agents is regarded as part of costs of ownership transfers and so used for GFCF. The ownership transfer costs are split between dwellings and leisure homes, transactions in land and other (business) buildings. The split was found in the 2006 revision from a study of transactions in the register of property ownership. The property registration tax is regarded as a product tax on the transaction costs.

5.10L.11 Purchase and sale of existing dwellings (net sales) have been recorded in the NNA to the extent they are recorded in government accounts, i.e., crossing over to/from government sector and household sector.

5.10L.12 For the sale and management of real estate industry (industry 680), the SBS are used to estimate total GFCF, following the general method (see chapter 5.4.2). The proportion of this total that is dwellings is estimated from changes in the stock of dwellings in the balance sheet.

5.10M GFCF - NACE M. Professional, scientific and technical activities

5.10M.1 **Investment activities of NACE M** are distinguished in **7 industries** as for production.

5.10M.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 19.2 billion in 2019, or **0.5 per cent of GDP**. Most important investment assets are IT, machinery and equipment.

NACE M. Gross fixed capital formation. 2019.

<i>NACE</i>		NOK billion	Per cent of GDP
69-70	Legal and accounting activities	2.9	0.1
71	Architectural and engineering consultancy activities	5.9	0.2
72	Scientific research and development	8.5	0.2
73	Advertising and market research	0.5	0.0
74-75	Other professional, scientific and technical activities	1.3	0.0
NACE M		19.2	0.5

5.10M.3 Main source used are:

- Annual accounting statistics (SBS)

5.10M.4 GFCF for industries in NACE M is estimated on the basis of GFCF data in the **SBS-based** annual accounting statistics that are utilized for estimating GFCF industry totals and distribution by type of fixed assets, see chapter 5.4.2.

5.10N GFCF - NACE N. Administrative and business support service activities

5.10N.1 Investment activities of NACE N are distinguished in **7 industries** as for production.

5.10N.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 13.5 billion in 2019, or **0.4 per cent of GDP**. Among the most important investment assets, we find machinery and equipment, including IT-equipment, and passenger cars.

NACE N. Gross fixed capital formation. 2019

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
77	Rental and leasing activities	10.6	0.3
78	Employment activities	0.5	0.0
79	Travel agency and tour operator reservation service	0.5	0.0
80-82	Security and investigation activities	1.9	0.1
NACE N		13.5	0.4

5.10N.3 Main source used are:

- Annual accounting statistics (SBS)

5.10N.4 GFCF for these industries is estimated on the basis of GFCF data in the **annual SBS-based accounting statistics** that are utilized for obtaining GFCF totals and distribution by type of fixed assets.

5.10N.5 For **passenger cars** that are important asset to the rental and leasing industry, it is assumed that cars that are purchased by producers are sold on to the households after 3 years, see also chapter 5.10.6.

5.100 GFCF - NACE O. Public administration and defence

5.100.1 **Investment activities of NACE O** are distinguished by **3 industries**, one for general public administration, one for defence, and one for other public services activities. The latter includes the Norwegian Railway Administration, the Norwegian Coastal Administration, the Norwegian Geological Survey and several research institutes. The specifications are similar to that of production in public administration and defence, with separate estimates for non-market producers of central government and local government.

5.100.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 125.3 billion in 2019, or **3.5 per cent of GDP**. **GFCF in defence** was estimated at 26.4 billion in 2019. In the NNA, most important investment assets are structures - in particular, roads and streets, but also other structures - and machinery and equipment. Transport equipment is also an important item in defence. In public administration of central government and local government, buildings are import investment assets.

NACE O. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
84	Public administration and defence	125.3	3.5
NACE O		125.3	3.5

5.100.3 **Main sources used** are:

- Central government accounts
- Local government accounts
- Specifications on military expenditures obtained from the Ministry of Defence

5.100.4 The annual **central and local government accounts** are used to estimate GFCF in the non-market activities of central and local government, respectively. In central government, several hundreds of items in **central government accounts** define GFCF in central administration. In most cases, the type of investment could be seen from the accounts. On the part of **defence**, however, supplementary specifications on military expenditures are obtained from the Ministry of Defence and military forces and are used and serve as basis for the allocation of military expenditures for either GFCF or intermediate consumption. For Central government, it is as a rule possible to identify the projects in the detailed budget notes, where more information on the projects are given.

5.100.5 The **local government accounts** identify GFCF flows on main types of assets. In the further processing for the NNA - including also the industry allocation (local administration in this case) - the given investment flows are further disaggregated (based on expert judgement) to conform to the asset classification used in the NNA. Number of details in the central government accounts suggests that the

NNA specifications are more easily approached in the case of central government than for local government.

5.10P GFCF - NACE P. Education

5.10P.1 **Investment activities of NACE P** are all included in one industry as for production. However, separate estimates are made for the four different types of producers involved, i.e., non-market producers of central government, of local government and NPISHs, and market producers.

5.10P.2 Gross fixed capital formation (GFCF) of education is estimated at NOK 45.6 billion in 2019, or **1.3 per cent of GDP**. It is mostly related to investment in non-market education (45.1 billion). Most important investment assets are non-residential buildings and machinery and equipment, in particular items of schools and other buildings for education, and computers and office equipment. Disinvestments of cars and sale of schools occur however in insignificant magnitudes.

5.10P.3 As **illustrated by 2019 figures**, the GFCF estimate in education was the following:

NACE P. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
85	Education	45.6	1.3
NACE P		45.6	1.3

5.10P.4 **Main sources used** are:

- Central government accounts
- Local government accounts

5.10P.5 The **annual central and local government accounts** are used to estimate GFCF in the non-market activities of central and local government, respectively. For instance, GFCF of buildings for education in general government is estimated from some detailed items in the central government and local government accounts.

5.10P.6 For market education and for the NPISHs' - **the minor items** - GFCF has been estimated from the cost survey for private education institutions. Market activities of education are of rather minor importance in Norway. GFCF is assumed to follow the same development as for output in this small activity of market education.

5.10Q GFCF - NACE Q. Health and social work

5.10Q.1 **Investment activities of NACE Q** are specified in 4 industries and differentiated on all four types of producers, i.e., with same specifications as for production.

5.10Q.2 Gross fixed capital formation (GFCF) of health and social work is estimated at NOK 35.3 billion in 2019, or **1.0 per cent of GDP**. It is mostly related to investment in non-market sector (32.1

billion). Most important investment assets are non-residential buildings and machinery and equipment, in particular items of hospitals and other buildings for health and social work, and computers and office equipment. Net purchases of existing buildings occur, however in insignificant magnitudes.

5.10Q.3 As **illustrated by 2019 figures**, the GFCF estimate in health and social work was the following:

NACE Q. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
86	Human health activities	20.7	0.6
87-88	Social work activities	14.5	0.4
NACE Q		35.3	1.0

5.10Q.4 **Main sources used** are:

- Central government accounts
- Local government accounts

5.10Q.5 The **annual central and local government accounts** are used to estimate GFCF in the non-market activities of central and local government, respectively. For instance, GFCF of buildings for health and social work in local government is estimated from detailed items in the local government accounts. Reclassification of hospitals from 2002 might be mentioned as institutional change - responsibility transferred from local government (counties) to central government.

5.10Q.6 For **market health and social work** and for **the NPISHs**, GFCF is based on health statistics, now including accounting data, which therefore have been used in the NNA for health institutions. For other NPISHs, the GFCF is estimated as a fixed percentage of output.

5.10R GFCF - NACE R. Arts, entertainment and recreation

5.10R.1 **Investment activities of NACE R** are specified in 4 industries and differentiated on all four types of producers, i.e., with the same specifications as for production.

5.10R.2 Gross fixed capital formation (GFCF) of health and social work is estimated at NOK 8.5 billion in 2019, or **0.2 per cent of GDP**. It is mostly related to investment in non-market sector. Investment assets are mostly distributed on non-residential buildings, structures and machinery and equipment.

5.10R.3 As **illustrated by 2019 figures**, the GFCF estimate in arts, entertainment and recreation activities was the following:

NACE R. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
90-92	Creative, arts and entertainment activities	1.9	0.1
93	Sports activities and amusement and recreation activities	6.6	0.2
NACE R		8.5	0.2

5.10R.4 Main sources used are:

- Central government accounts
- Local government accounts
- Annual accounting statistics (SBS)

5.10R.5 The **annual central and local government accounts** are used to estimate GFCF in the non-market activities of central and local government (part of NACE 91), respectively.

5.10R.6 For the **market part and the NPISHs**, GFCF is based on a combination of directly or indirectly used SBS-data when available and a fixed share of corresponding output. In the **2011 main revision**, own account production of literary and artistic originals was introduced in the NNA.

5.10S GFCF - NACE S. Other service activities

5.10S.1 Investment activities of NACE S are specified in 3 industries and differentiated on two types of producers, market producers and non-market producers in NPISHs, i.e., with the same specifications as for production.

5.10S.2 Gross fixed capital formation (GFCF) of these industries is estimated at NOK 3.7 billion in 2019, or **0.1 per cent of GDP**. It is mostly related to investment in non-market sector. Investment assets are mostly distributed on non-residential buildings and machinery and equipment, including IT-equipment.

NACE S. Gross fixed capital formation. 2019.

<i>NACE</i>		<i>NOK billion</i>	<i>Per cent of GDP</i>
94	Activities of membership organisations	2.0	0.1
95	Repair of computers and personal and household goods	0	0.0
96	Other personal service activities	1.7	0.0
NACE S		3.7	0.1

5.10S.3 Main sources used are:

- Annual accounting statistics (SBS)

5.10S.4 The **annual accounting statistics (SBS)** is used to estimate GFCF in the market activities of NACE S (part of or whole of all three industries).

5.10S.5 For the **market part of the NPISHs**, GFCF is based on a combination of directly or indirectly used SBS-data when available and a fixed share of corresponding output.

5.10T GFCF - NACE T. Private households with employed persons

5.10T.1 GFCF is not estimated for this activity, i.e., **not considered appropriate**.

5.11 Changes in inventories

5.11.1 In the NNA, changes in inventories are specified by **a handful of different categories**. By far the largest items categories are the global items for **changes in inventories of goods** and **changes in inventories in services**. The other categories are all representing **work in progress**, both on goods and services, and including two items of work in progress on cultivated and biological assets. Compared with the classification of assets as inventories in ESA 2010, the breakdown in the NNA is more aggregated on regular inventories (not specifying materials and supplies, finished goods and goods for resale separately), while more disaggregated on work in progress.

5.11.2 Work in progress on **modules for oil production platforms and offshore production structures and movable exploration and drilling rigs** is treated as gross fixed capital formation in the NNA. However, work in progress on **ships** is still treated as changes in inventories, the reason for which is partly practical considerations in treating discrepancies against exports in external trade statistics, partly due to circumstances where contracts for purchase/sale may not be finally settled (tradable contracts and the like).

5.11.3 The NNA categories of changes in inventories **illustrated by 2019 figures** are:

Categories of changes in inventories. 2019

<i>Categories</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
Changes in inventories of goods	-18.6	-0.5
Changes in inventories of services	94.2	2.6
Work in progress on ships and modules for oil platforms	-20.1	-0.6
Other work in progress	0.8	0.0
Work in progress on cultivated assets	2.8	0.1
Services in progress	57.7	1.6
Correction VAT	-11.1	-0.3
Total changes in inventories	105.7	3.0

5.11.4 Changes in inventories accounted for 3.0 per cent of **GDP** in 2019. **Persistent positive changes in inventories** - and often with a large magnitude - constitute a problem that still has to be faced in main revisions. **In all the main revisions**, total changes in inventories tended to be lower than before. However, it still continues to be high - relative to GDP - compared with most countries.

5.11.5 **Changes in inventories on goods** are the result of individual changes in inventories for almost 500 NNA-products (goods and services). The **main approach** to the estimation of changes in inventories by products is through the **balancing of supply and use of each product total** as described in chapter 6 (the commodity flow method being used). It should be stressed, however, that these estimates are not just calculated residuals, but in many cases **adjusted estimates** established **from expert judgments** when reviewing supply or other uses of a good number of products that are considered problematic in some sense. The judgement of the estimates for change in inventories relates to both the level of change in inventories, the development from previous periods and of course taking account of type of product. Direct comparison of the NA estimates with available data from sources on changes in inventories is carried out for selected products. The assessment of the levels contains an analysis comparing the level of change in inventories relative to all other supply and use categories. This is done at a detail product level comprising about 800 goods and services items.

5.11.6 Only one **source** on changes in inventories existed for 2019, **the annual accounting based SBS**, but it has been found difficult to utilize. **Quarterly inventories statistics** collected through short-term indicators existed earlier but was closed down in 2010.

5.11.7 Particular product estimates are described in their output context, such as changes in **livestock for slaughter**, growth in **cultivated forests**, and changes in inventories in **fish farming** - the case of smolt (young fish). See chapter 3, NACE A for more information.

5.11.8 As stated elsewhere in the inventory also, the item of changes in inventories is a **relatively weak point** in the NNA compilation. Efforts have been made in the main revisions to make significant progress on changes in inventories estimates. While the main approach has been kept unchanged, as well as the residual and detailed character of the operations behind the final estimate, the underlying discomfort of having these persistent additions to inventories - at least at the global level - is still a problematic feature of the NNA. This implies that **research has to continue**, and also **whether a new approach should replace the present one** by adding detailed residuals from the NNA-product balancing should be addressed. The present approach is not really recommended in ESA 2010, although under certain conditions - and referred to as practical method - approximation methods could be used that include residual kind of changes between beginning and end of period, among others.

5.11.9 Being on **research agenda for improvements** for several years, examinations have been made several times on the possibility to utilize either of the two sources referred to above. Now, as the short-term statistics has been stopped, **utilizing data from the SBS** is the only option for the **annual NNA**. The latter was looked into in the 2002 revision, but not completed as there appeared to be quite sizeable discrepancies between the provisional results of that new method and the present one being used. While experiences are gained as time goes by on SBS-based statistics and their use in the NNA, the item of changes in inventories is surely one that requires much attention and accumulated statistical experience. However, there should be better conditions for improvements probably in not-too-distant future. At present, SBS-based statistics have been successfully explored and utilized for items like output, intermediate consumption and compensation of employees, while more problems are faced for gross fixed capital formation. With such a perspective, beyond overcoming GFCF problems, changes in inventories might be tackled next. It involves various adjustments to be made (excluding holding gains/losses etc.).

5.11.10 The last effort was initiated within the umbrella of the quality-upgraded investments supported by Eurostat grants. The latest test was made in 2017. It concluded that despite various data problems, it would be possible to use the "NO" figures to estimate most of the changes in inventories in the NNA. This has not yet been implemented, however.

5.11.11 In light of the large figures for changes in inventories, several projects were launched in the wake of the 2014 main revision, concentrating on the apparent imbalances between supply and use of special types of services. Among those, one can mention services incidental to petroleum extraction

and ICT-services. Probably problems related to both supply, i.e., production, and use, in particular exports, will be uncovered. Both related to the problematic issue of globalisation. Further testing and research are planned ahead. The results of these efforts will probably not be implemented into current estimations before the next main revision.

5.12 Acquisitions less disposals of valuables

5.12.1 **Acquisitions less disposals of valuables** represent a new main category of gross capital formation. In the NNA, this item so far has really not been introduced in a significant way. It seems that reliable sources are not available, although this has to be better explored (on research agenda). It will therefore be on the agenda for the next main revision. Valuation aspects should be looked carefully at as well.

5.12.2 Just an insignificant value has been incorporated as yet. It relates to the NNA-product - **works of art** - as characteristic product of the activity of artistic and literary creation and interpretation. This NNA-product is mainly domestically produced, while used partly for investment, household consumption expenditure, and to a much lesser extent intermediate consumption and exports. With just a rather small value for investment, the item has been listed among GFCF items instead of being focused separately as an aggregate.

5.13 Exports of goods

5.13.1 In the NNA, exports of goods are distinguished by **two main categories**, each of them cross-classified with a set of products. The two categories are:

100	Exports of goods recorded in external trade statistics
200	Exports of goods and services not recorded in external trade statistics

The **first category** is defined to include goods that are **recorded in the external trade statistics (ETS)**. In a **second category** are recorded goods outside external trade statistics together with exports of services. Basically, the cases listed in ESA 2010 para. 3.165 should be covered in the statistics used. As to the borderline between goods and services, it may be mentioned that 13 out of 370 products in the first category are in fact characteristic products of service-producing industries (in particular software programs, recycling products and works of art). A reclassification from goods as recorded in the ETS to services is needed to adapt to the national accounts supply and use tables, or more in general to achieve the most correct split between goods and services. As to the question how to identify the goods to be defined as services by convention, the most practical solution is to make reference to the correspondence table between the CPA/NACE classification and the combined nomenclature/HS used by the External Trade statistics.

5.13.2 The distinction between **intra-EU and extra-EU** transactions is not applicable in the case of Norway.

5.13.3 Further breakdowns of these categories have been employed for **publication purposes**. In particular, characteristic products of the oil and gas activities have been specified. In addition, in the publication table also specified are both ships and also export items on aggregated characteristic products of main manufacturing industries and aggregates of exports from other groups of goods-producing and service-producing industries (from agriculture, forestry and fishing, mining and quarrying, and also electricity). For the breakdown on goods and services, the **product classification** rather than the **category classification** has been followed.

5.13.4 Exports of goods are estimated at NOK 909.3 billion in 2019, or **25.5 per cent of GDP**. Exports of goods accounted for 70.4 per cent of total exports of goods and services in 2019.

5.13.5 The following table presents the **2019 figures for exports of goods** broken down by the main **publication categories**:

Exports of goods. NOK billion. 2019.

<i>Type of good</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
Goods total	909.3	25.5
Crude oil and natural gas	463.3	13.0
Ships, oil platforms, aircraft	12.4	0.3
Other goods	434.2	12.2
Agriculture, forestry and fishing products	66.0	1.9
Mining and quarrying products	5.9	0.2
Manufacturing products	357.1	10.0
Electricity	4.6	0.1
Other goods excl. refined petroleum products	390.1	10.9

5.13.6 Main source used is:

- External trade statistics

5.13.7 The **external trade statistics** are one of the main sources used in national accounting, and are mainly based on customs declarations for all movements of goods across the Norwegian customs borders. The ETS is collecting information on a few items that are not covered by ordinary system. This applies mainly to ships, movable oil rigs, oil and gas exports, and electricity imports and exports. The ETS is also covering transactions below NOK 1000 on the import side and below 5000 on the export side but exclude this when publishing data as the number of transactions is vast, and the values are not significant. National account is still covering this. There are also a few exceptions when it comes to the treatment of imports and exports of goods in the national accounts: one exception for 2019 is made to imports of goods consignments below the value of NOK 350 for which special estimations have been done, see chapter 5.15. Furthermore, there are own calculations on imports of petroleum by carriers in ports abroad.

Norway is not part of the Intrastat system. **Excluded from external trade statistics** are the following categories of exports that are not included in the statistics:

- a) Goods dispatched to Svalbard and Jan Mayen.
- b) Goods dispatched to Norwegian ships, aircrafts, mobile offshore installations and fixed installations on the Norwegian part of the continental shelf.
- c) monetary gold; i.e. gold exchanged between national or international monetary authorities or authorized banks.
- d) means of payment which are legal tender and securities, coins and banknotes, postage stamps and other stamps that represent evidence of financial claims, in circulation.

- e) goods for and following temporary use, provided that the expected duration of the temporary use is no longer than 12 months (goods for display or use at exhibitions, for scientific research, goods on loan, professional equipment, means of transport, containers and equipment connected with transport, equipment in use for the press, radio and television equipment, etc.).
- f) Goods dispatched to Norwegian territorial enclaves (includes embassies and national armed forces).
- g) Goods dispatched from enclaves of other countries or international organizations located in Norway.
- h) Goods supplied to enclaves of other countries or international organizations located in Norway.
- i) Newspapers and periodicals sent under direct subscription.
- j) Customized software and licenses.
- k) Content delivered electronically (including e-books, downloadable games, etc.)
- l) Gifts, samples and advertising materials. Goods supplied free of charge which are themselves not the subject of a commercial transaction.
- m) Goods sent for and returned after repair and the associated replacement parts used in the repair.
- n) Bunkers delivered to foreign ships and aircraft in Norwegian harbor/airport.
- o) Travel equipment for personal use.
- p) Goods functioning as means of transport (ship, aircraft, packaging, etc.)
- q) Transit trade.
- r) Re-export if followed by a replacement delivery free of charge.
- s) Replacement deliveries free of charge.
- t) Goods under merchanting.
- u) Waste and scrap without any commercial value.
- v) Illegal and smuggled goods.
- w) Statistical threshold is NOK 1 000. Goods totaling less than NOK 1 000 are excluded from the statistics. Exports of goods less than NOK 5 000 (except from goods that are subject to taxes and restrictions) are not subject to declaration by the Customs.

5.13.8 No adjustments are done to the External Trade statistics in use in the NA and BoP except for a re-classification of selected Harmonized System codes from goods to services.

5.13.9 **Supplementary information** for exports falling outside the customs area include in particular transactions related to oil activities on the Norwegian part of the Continental shelf, and is obtained with the oil and gas activity statistics. The energy accounts are also available for supplementary use.

5.13.10 The **external trade statistics** are used to estimate exports of the **first category** listed above. Exports of these goods are specified by more than 370 product items (goods). Exports of **crude oil and natural gas** are also included, the same are exports of new and existing ships. More detailed description of the external trade statistics-based estimation should not be necessary.

5.13.11 No general adjustment is made in the NNA to the external trade statistics in order to account for goods that cross the border without a **change of ownership**. External trade statistics, in practice, record the goods when they physically cross the customs boundary of the country. Thus, it has not been possible to make an adjustment for the difference between the change in ownership principle and the one from current practice. For goods crossing the border without change in ownership, no correction is made, i.e. Norway uses the General Trade Principle where a change of ownership is assumed when a good crosses the border. One example is Norwegian owned oil from oil fields on the Norwegian continental shelf is landed by pipeline in England and transported back to Norway; those flows are registered gross as exports and imports of crude oil respectively, even if no change in ownership has taken place. Otherwise transit trade and free trade zones etc. are of minor importance in Norway. For other goods where sale and purchase do not imply border crossing (ships and other

movable capital equipment), the ownership principle is followed. Regarding processing of goods, the gross flows are recorded in imports and exports of merchandise. There is an ongoing project aiming to make corrections to imports and exports in order to record these transactions correct. This will also imply that there will be corrections in the imports and exports of the service products connected to processing. Another type of adjustment is however made, the one for **foreign ownership adjustment territorially** (related to oil and gas fields in the North Sea, air transportation of SAS), i.e., for the discrepancy between the Norwegian ownership share and the actual share as recorded through the external trade statistics.

5.13.12 Exports of merchandise (goods) are **valued f.o.b.** at Norwegian ports where goods are exported or at the customs frontier of the operation area of the Norwegian part of the Continental shelf. The f.o.b. prices are purchasers' prices that may include export levies and costs connected with loading, irrespective of whether these are paid by the exporter or importer.

5.13.13 The **second category** - exports of goods and services not recorded in external trade statistics - specifies by 2 quite special products (goods) that constitutes a negligible part of total exports of goods. Illustration by 2019 figures follows below.

Exports of goods not recorded in external trade statistics. NOK billion. 2019.

<i>Sub-category and products</i>	<i>NOK billion</i>	<i>Special comments</i>
Exports of goods not recorded in external trade statistics	0.44	
009 389 Oil production platforms; adjustment for foreign ownership shares	0.36	Item in form I, multiplied by UK ownership part of the border crossing Statfjord and Frigg fields
009 719 Oil exploration and drilling; adjustment for foreign ownership shares	0.08	Item in form I, multiplied by UK ownership part of the border crossing Statfjord and Frigg fields

5.14 Exports of services

5.14.1 In the NNA, exports of services are included in one **main category**, cross-classified with a set of products including goods:

200	Exports of goods and services not recorded in external trade statistics
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The specifications for publication purposes have put emphasis on more details related to the oil and gas activities and shipping activities than other activities. For the delineation between goods and services, see problem mentioned under exports of goods. Basically, the cases listed in ESA 2010 para.3.173 on services should be covered in the statistics used.

5.14.2 Exports of services are estimated at 382.9 billion NOK in 2019, or **11 per cent of GDP**. Exports of services accounted for approximately 30 per cent of total exports of goods and services in 2019.

Exports of services. NOK billion. 2019.

<i>Type of service</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
Services total	382.9	11.0
Gross receipts, shipping	109.1	3.1
Petroleum activities, various services	20.1	0.6
Pipeline transport	12.8	0.4
Travel	51.9	1.5
Transport, post and telecommunication	45.1	1.3
Financial and business services	85.1	2.4
Services n.e.c	58.9	1.7

5.14.3 Main sources used are:

- The quarterly sample survey of exports and imports of services UT. Started 2005 due to abolition of the central bank's settlements statistics (or ITRS)
- Quarterly survey of Travel, debit
- Quarterly survey on cross border trade, debit
- Annual survey on Travel, credit
- Bank and Insurance Reporting system (Census)
- A number of services exports and imports transactions estimated at the National Accounts division
 - Further parts of the Travel item (both debit and credit, among other things, holiday homes)
 - FISIM
 - Financial services:
 - Monetary intermediation
 - Credit granting
 - Brokerage services
 - Services auxiliary to insurance and pension funding
 - Passenger transport (correction of Travel)
 - Oil and gas transport
 - Shipping credit and debit (partly covered by non-financial sector survey)
 - Exports and imports of government sector
 - Imports of services by households (based on international paying cards)

5.14.4 Prior to 2005 the **foreign exchange statistics (ITRS)** from Norges Bank (the central bank of Norway) was used in most instances for the estimation of exports of services. For gross receipts from shipping, both the ITRS and the **maritime transport statistics** have been utilized (see section on output of ocean transport). Traditionally, the tourism items have been exclusively approached from the

ITRS. Having faced increasing problems over the years, these basic statistics have been supplemented - from 1992 - by utilizing **tourism statistics** as well. For the category of other services, the ITRS was used almost exclusively, exceptions being **oil and gas activity statistics** for pipeline transportation services, **accounting data** for air transportation services and the accounts of Postal Service and Norwegian Telecom for post and telecommunication services.

5.14.5 Early in 2001 the central bank decided to close down the ITRS by the end of 2004, and a new project (**UT=Utenriks Transaksjoner (in Norwegian) = External Transactions**) was launched by Statistics Norway in 2002 with the aim to replace the ITRS with other sources. A matrix model (see below) was used in designing the new data collection system where the mapping of sources connected with the various institutional sectors and BoP items was put in focus.

UT-project

<i>SECTOR</i> <i>BoP-item</i>	ENTERPRISES		GOVERNMENT	HOUSHOLDS/ NPIHS
	FINANCIAL	OTHER		
GOODS	CUSTOMS DECLARATIONS			
SERVICES	DIRECT/ TOTAL/ ACCOUNTS	DIRECKT/ SAMPLE/ ACCOUNTS/ ADM.DATA	DIRECKT/ TOTAL/ ACCOUNTS	DIRECT/ SURVEYS TRAVEL/ CREDIT CARDS
INCOME	DIRECT/ TOTAL/ ACCOUNTS	DIRECKT/ SAMPLE/ ACCOUNTS/ ADM.DATA	DIRECKT/ TOTAL/ ACCOUNTS	ESTIMATIONS BASED ON STOCKS/ TAX DATA
TRANSFERS	DIRECT/ TOTAL/ ACCOUNTS	DIRECKT/ SAMPLE/ ACCOUNTS/ ADM.DATA	DIRECKT/ TOTAL/ ACCOUNTS	?
DIRECT INVESTMENTS	DIRECT/ TOTAL/ ACCOUNTS	DIRECKT/ SAMPLE/ ACCOUNTS/ ADM.DATA	DIRECKT/ TOTAL/ ACCOUNTS	IRRELEVANT
PORTEFOLIO INVESTMENTS	DIRECT/ TOTAL/ ACCOUNTS	DIRECKT/ SAMPLE/ ACCOUNTS/ ADM.DATA	DIRECKT/ TOTAL/ ACCOUNTS	INDIRECT?
OTHER INVESTMENTS	DIRECT/ TOTAL/ ACCOUNTS	DIRECKT/ SAMPLE/ ACCOUNTS/ ADM.DATA	DIRECKT/ TOTAL/ ACCOUNTS	INDIRECT?

5.14.6 For **services and income**, i.e., items relevant for GNI, the new sources and estimation methods fall into two categories:

- Those where information already existed or could be obtained with relatively small efforts (financial enterprises, government), and
- Those where new sources had to be identified and new surveys had to be implemented (non-financial enterprises, households/NPIHs).

For sources in the first category, information that already were collected and part of current statistics had to be used in a more extensive and systematic way than previously. For example, income data are now drawn directly from **government accounts**. Or transactions in both services and income with non-residents that were already part of the census type reporting from **financial enterprises**, or information from the petroleum activity statistics.

5.14.7 On the other hand, to compensate for the loss of bank settlements data regarding the **non-financial enterprises**, a quarterly survey became the current source. The population for the year 2019 concerning external trade in services for non-financial enterprises includes all enterprises. The population excludes small enterprises which have no or just a small amount of external trade in

services. To join this very limited population, the rest of the enterprises must fulfill at least one of the following five criteria:

- Total ingoing and outgoing cash flow transactions exceeding NOK 500 000, or outgoing transactions concerning import of services exceeding NOK 50 000 based on cash flow statistics
- FATS (Foreign-controlled enterprises in Norway/ Norwegian controlled enterprises abroad)
- The enterprise has been in the sample for at least four years, and has reported figures on external trade in services
- Enterprises within the quarrying and mining industry, which has joint VAT (*mva* in Norwegian) number with an enterprise which fulfill the first criteria
- The enterprise is within the external ocean transport industry, and has a turnover of at least NOK 5 000 000

When excluding all enterprises not fulfilling at least one of these five criteria, about 30 000 enterprises remain. From this population about 2750 enterprises are selected in the survey that are estimated to cover more than 95 per cent of the total true values. About 2000 enterprises are selected by a simple stratified method. The strata are defined by industry, and the importance of the specific industry regarding external trade in services. Register-based cash flow statistics and whether the enterprise is a FATS unit or not has to be taken into consideration. The rest of the enterprises, around 750, are in the sample every year.

5.14.8 For enterprises within external ocean transport a stratified rate estimator is being used in the estimation, where turnover is used as explanatory variable, meaning that within each stratum, the sample is being inflated up to stratum total by first an estimation of the relationship between summarized external trade in services and summarized turnover in the sample, and then multiplying this relationship with the total turnover in the whole stratum. This contains enterprises obtained from the whole population, and selected by an occasional simple stratified method. The reason why enterprises from the whole population are selected is to ensure that enterprises that have a large external trade in services are being selected. The strata in use are defined by industry and turnover.

5.14.9 A difficult challenge has been to establish and maintain a high-quality population register for resident units involved with non-resident units. The former ITRS register, the external trade in goods register, information on non-resident board members from the Directorate of Taxes' register of Shareholders and other relevant information embedded in the statistical infrastructure has been utilized to keep track of targeted units. Also information from media and the direct contact with reporting units are useful in this respect. In addition, a register on cross border transactions and currency exchange that was established in 2005 to meet the needs of government fraud authorities etc., is used as a source for information needed to maintain the BoP register.

5.14.10 Exports and imports of services are to be recorded at the **time they are rendered**. In the guidelines to the reporters of the new survey it is clearly stated that “Reported data should be based upon actual transactions...” (§4). Further it says (§ 5.1); “... the reporting firms (are) to state transactions during the reporting period as earned incomes and accrued costs.” Mostly the period in the accounting system of the companies is in accordance with the required period in the statistical system, and in practice the services probably will be reported for the period they are booked as income/expenditures in the accounts. To seek consistency with production/use of services in the NA it is in §5.3.1 referred to the NO, the administrative source for the Structural Business Statistics (SBS): “...the items asked for are linked to the NO supplied to the Directorate of Taxes”.

5.14.11 The **levels** of exports and imports of services according to the **new sample surveys** have been assessed for each of the detailed services products as to whether the data can be used directly or has to be adjusted for definitional reasons or others. Here, it can also be useful to recall the main conclusion of the report from the Department of Statistical Methods evaluating the UT-project: “UT-trade in services survey is a complicated survey. There are many sources of errors: problems in defining population, uncertainty linked to the sample sizes, errors of measurement including explaining to the reporters essential characteristics like resident versus non-resident or services versus goods, and errors of estimations. Experiences tell us that it will take time to reach the optimal design of this survey”. In the following some of the areas where adjustment to the survey data has been done are indicated:

Imports of freight transportation services are in the NNA and BoP estimated as an integrated part of the CIF-FOB adjustments and the survey data from the UT-statistics are not used. As Norway is not part of the Intrastat system and has kept a full and detailed customs declaration system the CIF-FOB correction is estimated using declaration data, which in addition to statistical value also states type of transportation means and nationality. These data are used to estimate the imports of transportation services as by definition the transport services are deemed to be imported by the country to which the goods are imported. A separate argument for choosing this solution is that collecting the information on imports of freight services from the domestic importers is not expected to give a reliable picture as many importers will face a total invoice only and are not able to identify transportation costs separately. The fact that imports are measured at CIF and recalculated at FOB makes it necessary to do adjustments on the collected service data, affect the service items of transport. **Imports of Pipeline transport** of crude oil and natural gas is assumed not relevant to the NNA and BoP as no physical transportation to Norway of these goods takes place using pipelines. For **Petroleum services** alternative sources exists in terms of information in the Oil and gas statistics. For **Construction services** the survey is not able to identify the value of goods and to what extent there is an overlap with the External trade in goods statistics. In general there is also a challenge to distinguish between domestic activity on one side, and imports and exports on the other when it comes to the activity of construction. **Merchanting services** are per definition to be observed on the exports side only. For **Business travels debit** reported by the enterprises will have an overlap with data from the Travel surveys, where the travellers are asked the same. Similar can be said about **Exports of passenger transport services** reported by domestic passenger transport enterprises where it will be an overlap with Travel credit as measured by using tourism statistics.

5.14.12 In conclusion, the results of the above mentioned assessments and some other similar assessments on the detailed services items, are that the levels of both exports and imports in the trade in services survey are adjusted when used in the NNA and BoP.

5.14.13 For the **household sector's** transactions with non-residents, the most severe loss when the ITRS was closed down was data on the BoP item **Travel**. Here a **new quarterly survey on cross-border one day travels** of resident persons to neighbouring countries has been introduced, covering about 15 per cent of the total item Travel debit. The sample size is 2 000 persons and the values reported are grossed up to represent the whole population of Norway. In addition, data from the **already existing quarterly survey on travel** abroad including minimum 1 night overstay (sample size also 2 000) is added together with some minor items representing expenses by diplomats and students etc. to reach the Travel item in total.

5.14.14 For Travel credit, i.e. non-residents expenses on travel in Norway, estimates are based on benchmark estimations using annual, bi-annual and tri-annual data from private research institutions, surveying non-residents visiting Norway, both in terms of number of visitors and their expenses. Tourist statistics (accommodation, passenger transport) published by Statistics Norway are used for calculating preliminary figures.

5.14.15 For some other relevant Rest of the World account and BoP items related to households (interests, dividends), figures from 2004 ITRS are extrapolated using growth in household income in general. It must be stressed that the flows are of minor importance. Of more importance are the flows

of compensation of employees to and from abroad. For those items a new estimation model was developed in 2006, and improved in later years, generating flows of both wages and salaries and corresponding flows of premiums (see chapter 8.1).

5.14.16 As for the **NPISHs**, exports of services are estimated for the first time representing aid services supplied to non-residents by domestic organisations working abroad. The data used are administrative data collected by NORAD (NORwegian Agency for Development cooperation). All NPISHs receiving governmental financial support have to report a full income and loss statement, as well as balance sheets and other relevant information to NORAD. The NORAD data shows that 90 per cent of the operating costs of the aid organisations operating abroad are financed through governmental transfers. From this information source estimations are made on the value of aid services exported as well as transfers made to abroad, including a geographical breakdown.

5.14.17 **Insurance** is a particular case in national accounts and balance of payments due to special definitions used. In principle, the measurement of transactions in international insurance services is consistent with that of insurance services for resident sectors in SNA93 and ESA95. Both exports and imports are now estimated by **using the ratio of services to gross premiums** as observed in the statistics on domestic insurance companies. Non-life and life insurance are recorded as two different products; re-insurance is, however, not recorded separately but included in the figures for non-life insurance. As from 2005 the information on premiums (and claims) flows to and from abroad (non-residents) necessary to estimate the corresponding insurance services flows, are taken from the **UT-statistics**, i.e. the premiums reported by the relevant domestic units (financial and non-financial enterprises, government).

5.14.18 When it comes to **software content** of the relevant CN codes in the foreign trade statistics no attempt has been made to identify this. Also there is no systematic and frequent assessment in the processing of the customs declarations as to whether exports or imports of software goods are valued at full value rather than the value of the carrier only. However, as long as the software is subject to taxation (VAT) the full value of the software and not only the value of the carrier will be declared. This can be detected in the declarations by comparing the values to the quantity data for each detailed product group. Another point is that “goods” for which the services part constitutes most of the economic value should be classified as services and not goods. This problem has been approached by **re-classifying selected items in the Harmonised System from goods to services**. This involves specific products like photographs, films, etc, for which the value of the product is more related to the amount of services put into it than the physical good itself. The selection of goods under this treatment follows the recommendations of the CPA classification. In the nomenclature of the reporting system (UT) IT-services on software is specified and identified (code 721000). Royalties and licence fees related to software are however not identified in the reporting, but this will be introduced in 2019 in the UT-statistic.

5.14.19 Exports of services are specified by some 90 NNA-products (services).

5.15 Imports of goods

5.15.1 In the NNA, imports of goods are distinguished by **two main categories**, each of them cross-classified with a set of products. The two categories are:

100	Imports of goods recorded in external trade statistics
200	Imports of goods and services not recorded in external trade statistics

The **first category** is defined to include goods that are **recorded in the external trade statistics**. In a **second category** are recorded goods outside external trade statistics. As to the borderline between goods and services, it may be mentioned that 14 out of more than 450 products in the first category are in fact characteristic products of service-producing industries (in particular recycling and software programs). More important, there were a few products of current expenditure abroad for shipping which actually are regarded as goods. Basically, the cases listed in ESA 2010 para.3.165 should be covered in the statistics used.

5.15.2 The distinction between **intra-EU and extra-EU** transactions is not applicable in the case of Norway.

5.15.3 **Further breakdowns of these categories** have been employed for publication purposes. In particular, characteristic products of the oil and gas activities have been specified. In addition, import items on aggregated characteristic products of main manufacturing industries and aggregates of imports from other groups of goods-producing and service-producing industries (from agriculture, forestry and fishing, mining and quarrying, and also electricity). For the breakdown on goods and services, the **product classification** rather than the category classification has been followed.

5.15.4 Imports of goods are estimated at 796.5 billion NOK in 2019, or **22.4 per cent of GDP**. Imports of goods accounted for 64 per cent of total imports of goods and services in 2019.

5.15.5 The following table presents the published **2019 figures for imports of goods**:

Imports of goods. NOK billion. 2019.

<i>Type of good</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
Goods total	796.5	22.4
Crude oil and natural gas	24.4	0.7
Ships, oil platforms, aircraft	35.8	1.0
Other goods	736.3	20.7
Agriculture, forestry and fishing products	19.3	0.5
Mining and quarrying products	10.9	0.3
Manufacturing products	701.3	19.7
Electricity	4.9	0.1
Other goods excl refined petroleum products	698.8	19.6

5.15.6 Main source used is:

- External trade statistics
- Maritime transport statistics
- Oil and gas activity statistics

5.15.7 The **external trade statistics** are one of the main sources used in national accounting.

Excluded from external trade statistics are consignments of goods in direct transit, the catch outside territorial waters by Norwegian fishing vessels etc., returned merchandise, free merchandise replacements, merchandise for repair abroad etc, personal belongings, goods imported for diplomats etc, supplies under military defence agreements, commercial samples etc., monetary gold, bunkers, temporary imports, etc. Also, consignments of goods at a value below NOK 350 are exempted, for which special estimations have been made. **Supplementary information** for imports falling outside the customs area include in particular transactions related to oil activities on the Norwegian part of the Continental shelf, and such information are obtained with the oil and gas activity statistics. The maritime transport statistics (for imports and intermediate consumption of fuels) and the energy accounts are also available for supplementary use.

5.15.8 The **external trade statistics** are used to estimate imports of the **first category** listed above. Imports of these goods are specified by approximately 380 product items (goods). More detailed description of the external trade statistics-based estimation should not be necessary.

5.15.9 No general adjustment is made to the external trade statistics in order to account for goods that cross the border without a **change of ownership**. See paragraph 5.13.11 above for more information. Adjustment is however made for **foreign ownership adjustment territorially** (related to oil gas fields in the North Sea, air transportation of SAS).

5.15.10 Imports of merchandise (goods) are **valued at c.i.f. prices**. These include all freight and insurance connected with the imported goods, irrespective of whether the payments are made to Norway or abroad. Total imports are **adjusted from c.i.f. valuation to a f.o.b. valuation**, until 2005 based on data from the annual maritime statistics and partly based on the ITRS. From 2005 this adjustment is based on special estimations involving information from **customs declarations** exclusively. Norway is not part of the Intrastat system and therefore has more information in the declarations than most European countries. The following information from the declarations is of particular interest and used for the c.i.f. – f.o.b. estimations.

Information from SAD=Single Administrative Document used in c.i.f. – f.o.b. estimations.

<i>SAD boxes:</i>	<i>The declaration header</i>	
15a	Country of consignment	3-digit national code (ISO 3166)
12	Freight	Freight, in NOK
20	Delivery terms	International Incoterm codes
21	Nationality Transport means	ISO alpha 3166 code (Nationality of transport means)
24	Transport means	International standard codes (EU)
	<i>The item part</i>	
33	Commodity number	Customs tariff line = statistical commodity number
34	Country of origin	3-digit national code (ISO 3166)
46	Statistical value	In national currency
45	Adjustment	Sum freight and insurance at item level

5.15.11 This information is used to estimate a set of ratios to be used in the c.i.f. – f.o.b. estimation:

- a ratio of total freight and insurance on merchandise imports c.i.f.
- a split between freight on residents carriers and on foreign carriers (also by country)
- a distribution of the freight by type of carrier

The ratios are used successively starting with the total c.i.f. value of goods imports to estimate total freight and insurance on goods imported to Norway, imports of freight and a split between different types of freight according to transportation means used. Also, an adjustment of freights exports is estimated to take into account that part of the freight of imported goods that are carried out by domestic transport units.

5.15.12 The **second category** - imports of goods not recorded in external trade statistics - is specified by 7 products (goods). The most important items are illustrated by 2019 figures below.

Imports of goods not recorded in external trade statistics. NOK billion. 2019.

<i>Sub-category and products</i>	<i>Value</i>	<i>Special comments</i>
Imports of goods not recorded in external trade statistics	9.3	
005 046 Adjustment for UK ownership share investments oil fields	0.01	Estimated from oil and gas activity statistics
005 060 Imports of unspecified goods for oil and gas extraction activities	12.58	Items of oil and gas activity statistics
005 062 Imports of unspecified goods for pipeline transportation activity	0.03	Items of oil and gas activity statistics
192 229 Jet fuel and petrol	3.48	Calculation based on the energy accounts
192 269 Marine gas oils	4.74	Calculation based on the energy accounts
192 289 Diesel oil	7.93	Calculation based on the energy accounts
192 299 Lubricating petroleum oils	0.35	Calculation based on the energy accounts
110 900 Alcohol, smuggled	0.63	Special estimations
211 050 Narcotics, smuggled	0.97	Special estimations

5.15.13 In addition, special estimations are undertaken to cover goods consignments at a value below NOK 350, which are exempted from customs declarations. In addition, the ETS exclude from the statistics transactions below NOK 1000. This is also included in this estimation. It mostly covers imports of various consumer goods ordered by households via internet. The estimations are, in addition to information from the ETS, based on information from statistics on use of credit cards and surveys conducted by private research institutes. In total, the estimated value for 2019 is NOK 22.08 billion or 2.8 per cent of the total value of imports of goods.

Imports of goods at value below NOK 1000. NOK billion. 2019.

<i>Product</i>	<i>Per cent</i>	<i>NOK billion</i>
101 320 Meat etc conserved	2.9 %	0.63
108 220 Chocolate and sugar confectionery	1.3 %	0.28
139 240 Mats, quilted rugs, sleeping bags, duvets	2.6 %	0.57
140 000 Clothes	30.0 %	6.63
152 000 Shoes with associated parts	4.1 %	0.92
204 200 Perfume, cosmetics and toilet preparations	6.4 %	1.42
222 900 Other plastic products	8.6 %	1.89
259 990 Other metal products not elsewhere specified or included	5.7 %	1.26
262 000 Computer equipment	5.6 %	1.23
263 020 Phones for mobile networks, line etc.	5.6 %	1.23
264 030 Apparatus and equipment for recording and reproducing sound and images	2.9 %	0.63
273 100 Insulated wire, cable and other electrical conductors	5.7 %	1.26
275 110 Household appliances and appliances	1.3 %	0.28
293 200 Parts and equipment for motor vehicles	10.7 %	2.37
324 000 Games and toys	4.6 %	1.01
581 100 Books	2.1 %	0.47
Total	100	22.08

5.16 Imports of services

5.16.1 In the NNA, imports of services are distinguished by one **main category** cross-classified with a set of products. The category is:

200	Imports of goods and services not recorded in external trade statistics
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5.16.2 Included is information on current expenditures abroad for **shipping** (also including the mentioned petroleum products), and on direct purchases abroad by residents (on **tourism abroad** and other consumption). They are the categories of imports that are considered most interesting for specification in the area of services in Norway. The number of specifications has been increased for publication purposes. A main reason is again more details from the oil and gas activities. For the delineation between goods and services, see problem mentioned under imports of goods. Basically, the cases listed in ESA 2010 should be covered in the statistics used.

5.16.3 Imports of services are estimated at 443.0 billion in 2019, or **12.4 per cent of GDP**. Imports of services accounted for approximately 36 per cent of total imports of goods and services in 2019.

Imports of services. NOK billion. 2019.

<i>Type of service</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
Services total	443.0	12.4
Gross receipts, shipping	1.2	0.0
Operating costs shipping, excl. bunkers	51.7	1.5
Petroleum activities, various services	33.1	0.9
Travel	141.8	4.0
Transport, post and telecommunication	27.5	0.8
Financial and business services	90.3	2.5
Services n.e.c	97.2	2.7

5.16.4 Main sources used are:

- UT - Collection system for BoP - from 2005
- Maritime transport statistics
- Oil and gas activity statistics

5.16.5 From 2005, a data collection system for residents engaged in economic relations with non-residents has replaced the ITRS source (the UT-statistics). For more information, see chapter 5.14 (Exports of services) and chapter 10 (Sources).

5.16.6 UT-statistics - from 2005, **maritime transport statistics** and **oil and gas activity statistics** are all among the main sources used in national accounting. Two quarterly travel and holiday surveys are the sources for Travel, imports. The figures are assessed within the framework of Tourism satellite accounts.

5.16.7 Imports of services are specified by some 90 NNA-products (services).

5.16.8 Insurance services debit (imports) are estimated on annual basis by taking a share of gross premiums paid to abroad as registered by the various sources. The share used is the same as estimated annually for the domestic insurance industry, i.e. service as a portion of gross premiums.

5.16.9 In the 2014 main revisions efforts were made to estimate **imports of services by households via internet** which are not covered by other sources (i.e., travel surveys). These services, including on-line gaming and various entertainment services, were for 2019 estimated at NOK 13.1 billion. The sources were statistics on credit cards use on the internet and special surveys conducted by private institutions.

CHAPTER 6 THE BALANCING OR INTEGRATION PROCEDURE, AND VALIDATION OF THE ESTIMATES

6.1 GDP balancing procedure

6.1.1 The following table provides an overview of the adjustments, including **balancing**, made to the 2019 source data used in the Norwegian NA for the estimation of GDP according to **the production approach**. Figures for output, intermediate consumption and gross value added for each of the industry sections A – T are presented in the table.

Source data and adjustments production approach. NOK billion. 2019

NACE	Items	Basis for NA figures	Adjustments					Final estimate
		Total	Data validation	Conceptual	Explicit Cut-off	Explicit exhaustive- ness	Balancing	
Total	Output	5986.5	-15.0	26.0	0	23.8	25.2	6046.4
	IC	2870.3	-13.8	6.6	0	-0.5	18.9	2881.5
	GVA	3116.2	-1.2	19.4	0	24.2	6.3	3164.9
A	Output	158.6	0	0.9	0	0.0	0	159.5
	IC	92.3	0	1.3	0	0.1	0.0	93.7
	GVA	66.3	0	-0.5	0	-0.1	0.0	65.8
B	Output	649.4	0	2.0	0	0.1	0.0	651.6
	IC	144.9	0	9.9	0	0.2	0.2	155.3
	GVA	504.5	0	-7.9	0	0.0	-0.2	496.3
C	Output	865.1	-11.6	21.3	0	0	-0.1	874.7
	IC	647.7	-11.6	18.5	0	0.0	-0.1	654.4
	GVA	217.4	0.0	2.8	0	0.0	0.1	220.2
D	Output	85.2	0	12.5	0	0	0	97.7
	IC	23.2	0	-3.9	0	0	0	19.3
	GVA	62.0	0	16.4	0	0	0	78.4
E	Output	60.0	0	0.5	0	0	0.0	60.4
	IC	38.0	0	0.1	0	0	0.0	38.1
	GVA	22.0	0	0.4	0	0	0.0	22.3
F	Output	641.3	0	-13.3	0	11.8	0.0	639.8
	IC	438.0	0	-13.4	0	0	0.0	424.6
	GVA	203.3	0	0.1	0	11.8	0.0	215.2

G	Output	477.2	0	-35.5	0	0	27.6	469.3
	IC	201.4	0	-9.0	0	0	18.0	210.4
	GVA	275.8	0	-26.5	0	0	9.6	258.9
H	Output	442.3	0	0.2	0	1.9	-2.3	442.1
	IC	303.1	0	-1.8	0	-0.8	-2.2	298.3
	GVA	139.2	0	2.0	0	2.6	-0.1	143.7
I	Output	95.8	-0.9	0.0	0	6.2	0.0	101.1
	IC	55.1	-0.9	-0.6	0	0	0.0	53.6
	GVA	40.7	0	0.6	0	6.2	0.0	47.5
J	Output	270.0	0	12.4	0	0.0	0	282.4
	IC	143.0	0.6	-7.4	0	0.0	1.4	137.6
	GVA	127.0	-0.6	19.8	0	0.0	-1.4	144.9
K	Output	226.8	0	8.3	0	0	0	235.1
	IC	81.7	0	0.0	0	0	0	81.8
	GVA	145.1	0	8.2	0	0	0	153.3
L	Output	390.1	0	-2.1	0	0.0	0	388.1
	IC	106.5	0	31.5	0	0.0	0.0	138.0
	GVA	283.6	0	-33.6	0	0.0	0.0	250.1
M	Output	284.9	0	10.1	0		0.0	295.0
	IC	140.1	0	-6.3	0	0.0	0.0	133.9
	GVA	144.8	0	16.4	0	0.0	0.0	161.1
N	Output	204.0	-2.5	-21.0	0	0.0	0.0	180.5
	IC	112.3	-1.9	-23.6	0	0.0	1.5	88.4
	GVA	91.7	-0.6	2.6	0	0.0	-1.5	92.1
O	Output	369.3	0	3.6	0	0	0	372.9
	IC	145.9	0	9.7	0	0	0	155.6
	GVA	223.4	0	-6.0	0	0	0	217.4
P	Output	191.6	0	20.8	0	0	0	212.5
	IC	39.1	0	0.2	0	0	0	39.3
	GVA	152.6	0	20.6	0	0	0	173.2
Q	Output	457.2	0	5.0	0	0	0	462.2
	IC	101.1	0	0.8	0	0	0	102.0
	GVA	356.1	0	4.2	0	0	0	360.3
R	Output	63.1	0	0.3	0	0	0	63.4
	IC	32.0	0	0.5	0	0	0	32.5
	GVA	31.1	0	-0.2	0	0	0	30.9
S	Output	54.2	0	0.0	0	3.7	0.0	57.9
	IC	24.6	0	0.2	0	0.1	0.0	24.8
	GVA	29.5	0	-0.1	0	3.6	0.0	33.0

T	Output	0.3	0	0	0	0	0	0.3
	IC	0	0	0	0	0	0	0
	GVA	0.3	0	0	0	0	0	0.3

6.1.2 In Norway, national accounts work has since the beginning been based on **the commodity flow method**. As a tradition, this method has served as a basis for having a **complete integration** between **national accounts** and **input-output tables**. With this integration having a strong footing in the international standards, Statistics Norway is proud to say that **computerized annual supply and use tables (SUT) have been in use for more than 50 years** in the Norwegian national accounts. Annual SUT in Norway has always been **compiled and balanced at a high level of detail**. This approach has over several decades been regarded as the most relevant one to ensure that the best estimates of GDP - and subsequently GNI - are being produced.

6.1.3 The commodity flow system could be seen as a **main system** and a **number of attached sub-systems**. The full system of national accounts contains **several million elements**, although a good majority of them in fact are zero-value cells. We can look - horizontally - at the **supply and uses for the products**, and - vertically - at each product flow to be split into different value components from basic price to purchaser's price (see section on valuation below). These commodity flows still amount to approximately **200 000 elements**, of which 70-80 000 are non-zero elements and consequently have to be estimated. The work is **highly computerized** in order to cope with data at this level of detail. In Statistics Norway, this has been achieved by using the **SNA-REA software**, an application that is both a flexible system and adapted to the framework of first SNA93/ESA95 and now 2008 SNA and ESA 2010. This software is constructed to handle a precisely defined, documented and efficient set-up with respect to routines for compiling annual NA based on the latest international NA standard. The SNA-REA software contains catalogues that contain lists of codes that classify various suppliers, types of use, and products used to produce the SUT.

6.1.4 The basic philosophy behind the **design of such a detailed system** is to create a framework that could utilize all kinds of specific information, which would be robust to changes in definitions and classifications, and which would allow users of data a maximum of flexibility in balancing all the detailed commodity flows. To provide a good basis for deflation, with positive impact on the **quality of the constant-price estimates**, is another important concern.

6.1.5 In designing such a comprehensive commodity flow system, various considerations have been taken into consideration. Most important from the data sources point of view, the design is viewed against **information** available along the following **four dimensions**:

-	Product-related information
-	Industry-related information
-	Category of final use-related information
-	Valuation-related information

6.1.6 As regards **product-related information**, the important consideration behind the choice to handle relatively detailed specifications is the wealth of product data available from external trade statistics and manufacturing statistics in particular. Around 900 NNA-products are nonetheless far below the product numbers in those two main sources. Around 6 000 products are specified for

exports and imports of goods in the external trade statistics, while some 3 000 products were specified for manufacturing output, but more extensive after adopting the structural business statistics involving manufacturing goods. The NNA level of 350 manufacturing goods may be seen as a fairly moderate number of products in that context. The SBS based on the NO and TS reports are the basis for the estimation of input in manufacturing. These forms give however only aggregated information on the distribution of the total costs on products. For this reason, special surveys have been carried out to capture the detailed product information needed by the NA, but over the last 25 years, these have been run only sporadic (every 5 years). From 2008, there has been an annual survey on the use of detailed products in manufacturing. This is important especially for the deflation of intermediate consumption in the NA but not so much of direct importance for the GNI estimates. However, through the overall balancing process using the commodity flow approach, some effect cannot be ruled out. In the services area, the number of the NNA-products has increased over time, but still not beyond the level of outputs identified in the sources, whether these are product-based or activity-based. Output of services is to a large extent defined in a characteristic way from more detailed activities than industries defined as the NNA-industries.

6.1.7 As regards **industry-related information**, the NNA level of detail is reasonably well matched with the availability of production statistics and similar industry-related sources. To reach a more suitable basis for practical work in the manufacturing area the industry specifications for manufacturing has been cut from around 100 industries in the early 1990s to less than 50 industries in the current NNA. For services industries, the less fortunate data situation is more related to the product composition of intermediate consumption than to industry totals of intermediate consumption as covered in the SBS for those industries. A symptom of this fact has rendered necessary a rather extensive use of unspecified intermediate consumption items in the NA in the field of services industries.

6.1.8 As regards **categories of final uses**, the NNA level of detail has a reasonably good matching between detailed products (services) and detailed breakdown of about 70 groups of government final consumption expenditure with basis in government accounts linked to common database with the national accounts. Household final consumption expenditure has a detailed breakdown of around 100 groups. Also, for gross fixed capital formation, the number of categories has been fairly high - more than 50 types of fixed assets. In this area - more than is the case for the consumption flows - the estimation benefits from the detailed product breakdown and the nature of the given product supplies. For changes in inventories - apart from a few special items - the Norwegian situation calls for no sub-categories at all, while utilizing the detailed product breakdown to monitor and estimate change in inventories for each product. For exports and imports, the product-category cross-classification has a similar position as for changes in inventories, in the sense that product details are far more important than sub-categories in the NNA. The opposite is however true for the balance of payments treatment of exports and imports.

6.1.9 As regards **valuation-related information**, the most important value components are contained in the difference between purchaser's price and basic price of each commodity flow. They are specified for proper treatment, i.e., the trade margins and other kinds of margin combined, non-deductible VAT, other taxes on products and subsidies on products. The nature of attaching information on prices, net taxes and margins to specific product flows has provided a sound basis for an articulated approach to the valuation challenges in the national accounts estimation in Norway (see section on valuation below).

6.1.10 **The supply side** of the NNA system is contained in a **matrix for domestic output (make matrix)**, the size of which is approximately 900 products by about 130 industries (around 150 industries in practice when distinguishing the different types of producers). **Imports** are added at the level of the 900 NNA-products as well. Customs duties are considered taxes on products. **Supply in basic prices** thus consists of output in basic prices and imports in c.i.f. prices.

6.1.11 Imports c.i.f. of goods are fed directly into the national accounts system from the files containing external trade statistics. The master file used for transformation to the NNA-products is updated annually and contains link for merchandise imports as well as merchandise exports. For international reporting, imports c.i.f. of goods are transformed to imports f.o.b. and imports of transportation and insurance services. **Imports of services** are coordinated with the **integrated balance of payments statistics**, which are designed to supply the NNA with all the product details that are needed.

6.1.12 Output is calculated in several parts and ways. For **manufacturing** and mining and quarrying, a master file has been established and updated annually to transform the data from manufacturing statistics to the NNA-products. These data are fed directly into the NNA system. For **non-manufacturing industries**, a great number of different sources and methods of estimation are used, although the process has become much more uniform in later years with the use of the SBS-based statistics in a large majority of services industries. For some industries, such as government services, only few adjustments are required, while there is a varying degree of closeness to source data in other industries, and in some industries a great number of adjustments are needed.

6.1.13 It should be mentioned that **non-characteristic output** is also included with output of the respective industries of the NNA. That means, e.g., that trade activity of manufacturing industries is treated as non-characteristic output of manufacturing.

6.1.14 In order to **illustrate the Norwegian practice**, 2019 figures have been filled into the chapter 9 tables of the ESA 2010 input-output framework. A **supply table in basic prices** is drawn up in **Table 9.5 of ESA 2010**. It also includes a transformation into purchasers' prices. The NNA data shown in the following table are **totals and recordings of selected three of the largest products in terms of output value in 2019**:

Three of the largest products (in output value). NOK billion. 2019

<i>Code</i>	<i>NNA-products illustrated</i>	
060010	Crude oil	286.9
460007	Wholesale trade margins	203.2
684000	Dwelling services, owner-occupiers	185.8

Supply table in basic prices and purchasers' prices. NOK billion. 2019.

Product	Output				ROW	Total supply in basic prices	Trade and transport margins	Taxes less subsidies	Total supply in purchasers' prices
	Industries								
	060	460	688	Total					
060010	286.9			286.9	13.9	300.8	2.0		302.8
460007		203.2		203.2		203.2	-203.2		0
684000			185.8	185.8		185.8			185.8
Total output	511.4	218.1	220.7	6046.5	1239.4	7285.9	-	398.6	7684.5
Market	511.4	218.1	34.3	4800.3	1239.4	6039.7	-	398.6	6438.3
Own final use			186.3	204.1		204.1			204.1
O.non-market				1042.1		1042.1			1042.1

6.1.15 The **row total** primarily shows the **distribution of total supply** in basic prices **on output and imports**. From supply table above it is seen that NOK 1239.4 billion out of the NOK 7285.9 billion for total supply of goods and services is covered from imports, measured in basic prices.

Supply in basic prices. NOK billion and percentages. 2019.

Supply	NOK billion	Percentages
Output	6046.5	83.0
Imports	1239.4	17.0
Total supply	7285.9	100.0

6.1.16 Total use of each of the NNA-products - also in basic prices - is to be **confronted with the supply** in the balancing process. This involves **several steps**. **First**, each category of use in purchasers' prices must be estimated. The product composition of each category of use is determined as well at this step. **Second** - in one operation including the product breakdown - the corresponding values in basic prices are calculated. **Third**, a first phase of the balancing of each product is carried out including estimation of **changes in inventories** of each product.

6.1.17 Total **exports** and the breakdown on products are known from external trade statistics and balance of payments statistics, as described above for imports.

6.1.18 Total **intermediate consumption** in each industry is based on much the same sources as for output, but in general the estimation problem is more complicated. In some areas, even when statistical coverage may be good, some kinds of expenditure are in the first place given at the enterprise level and not for the establishments. For manufacturing industries, intermediate consumption data have been readily available along with the data on output. After a period of receiving details on intermediate consumption in manufacturing every 5 years only, from 2008 on, data on detailed products were once again supplied on an **annual basis**. For industries beyond manufacturing, the annual **structural**

business statistics have provided **totals** together with some details to be used in most of these industries.

6.1.19 The initial estimates for each of the items of **household consumption expenditure** are either made directly in current values or - more often for other than benchmarking years - as estimates of **growth rates at current prices** multiplied by the latest figures of the preceding year. The growth rates are the results of several transformation processes that translate the classifications of the retail trade turnover index and the SBS-based annual statistics for retail trade into the COICOP being used in the NNA. In this way growth rates can be obtained for the particular consumption groups. Furthermore, the price index for each group is taken into consideration. It is a matter for experienced national accountants to make the choice of estimate for each group. The product composition of each group is usually neutral to this approach - applying the same growth to all products in a specific COICOP group - except that particular product information may be utilized and thereby affecting the product composition of the group. In **benchmarking years**, for example 2012, the levels of the various detailed COICOP groups are to a larger extent estimated directly by confronting the levels given in different sources used, including the 2012 household consumption survey, see chapter 5.7.

6.1.20 Data needed for the estimation of **central and local government consumption expenditure** are received from the specialized division on government finance statistics. Included is also a detailed breakdown of government sales (fees from households and other sectors). The breakdown of government consumption is applied in the commodity flow system of the NNA as well. The source of KOSTRA is being utilized with the local government accounts data.

6.1.21 For **gross fixed capital formation**, data for most industries are given by the SBS-based statistics or other industry statistics. The uncertainty with the GFCF data should however be stressed, because adjustments to the initial estimates are made more often than in any other category of final demand. In particular, the composition of the GFCF on type of investment goods can be changed through the commodity flow system.

6.1.22 **Changes in inventories** are a weak point in the compilation of national accounts in Norway, since reliable data have not been readily available for the particular product-oriented compilation context that is used in the NNA. The commodity flow method has therefore a direct application for this item, i.e., its initial estimate is obtained from adding all product differences between supply and other uses in basic prices. Lacking reliable inventory statistics, only some crude plausibility checks can be made. In 2017, tests were made of calculating changes in inventories based on the SBS data. These methods have not yet been implemented in the Norwegian National Accounts.

6.1.23 **On the user side**, the recorded items are measured in purchasers' prices. The **initial use table**, therefore, is a use table **in purchasers' prices**. In the illustration below, the selected three of the largest NNA-products and corresponding industries from the supply side are supplemented by total final use categories (1)-(6). **Final use categories** are:

(1)	Final consumption expenditure by households
(2)	Final consumption expenditure by NPISH
(3)	Final consumption expenditure by government
(4)	Gross fixed capital formation and valuables
(5)	Changes in inventories
(6)	Exports

At the bottom of the industry part of the table, **main components of value added** by industry are shown with **supplementary information** on gross fixed capital formation (GFCF) and labor inputs (hours worked), also by industry. Main components of value added are summarized in three items:

A	Compensation of employees
B	Other net taxes on production
C	Operating surplus/Mixed income, gross

Use table in purchasers' prices. NOK billion. 2019

<i>Product</i>	<i>Intermediate consumption by industries</i>				<i>Final uses by categories</i>							<i>Total use, pur- chasers prices</i>
	060	460	688	Total	(1)	(2)	(3)	(4)	(5)	(6)	Total	
060010				57.4					-4.5	249.9	245.4	302.8
460007												
684000					185.8						185.8	185.8
Total												
	56.2	97.6	70.9	2881.6	1493.6	85.5	867.7	958.2	105.7	1292.2	4802.9	7684.5
<i>Value added components</i>												
A	41.3	78.2	0.0	1733.2								
B	7.1	-1.6	7.6	-25.8								
C	406.9	43.9	142.2	1457.4								
Value added	455.2	120.5	149.8	3164.8								
Output	511.4	218.1	220.7	6046.5								
<i>Supplementary info</i>												
GFCF	178.0	12.2	196.8	958.2								
Labor inputs	38.1	158.3	-	4011.6								

6.1.24 The **row total** shows the **distribution of total use** of goods and services on **intermediate consumption** and **the six final use categories**. The largest main items in terms of the percentage share in the total use in purchasers' prices in 2019 are intermediate consumption (37.5 per cent), household consumption expenditure (19.4 per cent), and exports (16.8 per cent).

Uses in purchasers' prices. NOK billion and percentage. 2019.

<i>Uses</i>	<i>NOK billion</i>	<i>Percentages</i>
Intermediate consumption	2881.6	37.5
Exports	1292.2	16.8
Household consumption expenditure	1493.6	19.4
Gross fixed capital formation	958.2	12.5
Government consumption expenditure	867.7	11.3
Changes in inventories	105.7	1.4
NPISH consumption expenditure	85.5	1.1
Total uses	7684.5	100.0

6.1.25 Some **special comments** are offered to the figures of **the use table** in the following:

- For **wholesale trade margins**, the distribution on uses is not directly obtainable in the NNA, primarily because trade margins are not specified on wholesale and retail trade respectively on the use side. Some allocation might be provided from some simple assumptions (through uses of products involved).
- **Labor inputs** are given in millions of **hours worked** and combined for employees and self-employed. As documented in chapter 7 and elsewhere in the inventory, the NNA contains a number of employment series, among which hours worked are considered most adequate as labor input measure.

6.1.26 Balancing the system in **basic prices** is described in the paragraphs that follow. Comparisons and analysis are often made on the final completed estimates, but it may also be mentioned that the pre-balancing and the post-balancing data are compared systematically, and the revisions in that respect are presented in **the process tables**.

6.1.27 First, the set of **balances for the value components** lying between purchaser's price and basic price, i.e., non-deductible VAT, other taxes on products, subsidies on products, and trade and other types of margins, respectively, are calculated. These are value components that are determined initially on the user side following the commodity flow approach and the explicit use of catalogues specifying which flows are involved. Once having **determined their use**, the **corresponding notional item on the supply side** is arrived at.

6.1.28 Determining the **flows of margins** is somewhat **more complicated**, as user side information by products is reconciled with supply side information by industries. While the balancing leaves the

initial use side estimates unaffected for the other value components, this is normally not the case for the margins. Here, trade margins are sometimes corrected on the use side by products when the totals of wholesale and retail trade margins calculated for all uses are compared with total supply of each of these kinds of trade margins. If there are big differences, the matter is looked into. This may result in adjustments of trade margins for certain categories of final demand, and thereby affecting other flows, most typically the initial estimate of changes in inventories. The balancing of the margins thus constitutes a particular and complicated process. In general, the balancing of the trade margins would not have an impact on data in purchaser's prices. As said, there could be adjustments to changes in inventories.

6.1.29 Having determined the balances for the value components between purchaser's price and basic price, a **basis for the confrontation between supply in basic prices and uses in basic prices** has been obtained. During this balancing process in basic prices, some estimates might be changed directly. For instance, changes are made by eliminating change in inventories on a service product or by adjusting changes in inventories that are found unreasonable. Furthermore, there may be changes indirectly from adjusting again items in a final balancing of trade margins or (less likely) VAT, taxes on products, subsidies on products or other margins.

6.1.30 There are also **notional products** involved in the commodity flow method applied. These often have a rather complicated treatment and is not dealt with here.

6.1.31 It should be emphasized that the balancing process is **not** just a computerized operation. It is a **manual operation** or **balancing process**, in which even going back to the most detailed primary statistics is necessary from time to time. The art of national accounting takes over from the techniques of national accounting, in a work that usually is shared among a few experienced people. The **manual balancing process** (on-line computerized though) usually takes **1 - 2 months**, and it may seem a little paradoxical that the use of resources might be significantly higher in years when more benchmark information is available. More extensive information requires more resources for having it produced, but also more resources for having it used in national accounts. Outside expert knowledge is seldom used, and only for special products and areas on ad hoc basis.

6.1.32 Overall check in the manual balancing work might also lead to **detection of errors in the data input** into the system on either the supply or use side. Furthermore, some significant new developments may have happened which must be further investigated before the balancing could be completed. The commodity flow method might also have a decisive influence not just on the commodity composition, but also on the total sizes of the final demand categories. Again, it should be stressed that the manual balancing process indeed is **computerized in the sense** that each person engaged in the balancing works **on-line from a PC**.

6.1.33 The **balanced commodity flow system** described above might be seen as consisting of several matrices:

-	Supply matrix in basic prices
-	Use matrices, separately in
	Basic prices
	Non-deductible VAT
	Other taxes on products
	Subsidies on products
	Trade margins and other margins

6.1.34 When the separate use matrices are added together, the **use matrix at purchasers' prices** is acquired.

6.1.35 As seen above, the Norwegian national accounts have **articulated flows of the various value components** embodied in the supply and use tables. In the NNA, therefore, the most important value components between purchaser's price and basic price of each product flow are specified, technically by 2-digit codes connected to each pair of transaction by product identification. The 2-digit value component items introduced as components of purchaser's price are:

10	Basic price
11	Taxes on product
12	Subsidies on product
14	Wholesale and retail trade margins, transport margins
15	Net taxes on trade margins
17	Non-deductible VAT

6.1.36 **Value component items for aggregates** can also be arrived at:

13	Producer's price	(defined as: 10 + 11 - 12)
16	Trade margins in producer's price	(defined as: 14 + 15)
19	Purchaser's price	(defined as: 13 + 16 + 17)

6.1.37 The use table in purchasers' prices is to be split in **sub-tables** within the same use table framework. Thus, the following **three ESA tables** might be seen as three segments or sub-tables of the use table just presented in purchasers' prices:

Table 9.7	A simple trade and transport margin table
Table 9.8	A simple taxes less subsidies on products table
Table 9.9 and 10 of ESA95 combined	A use table in basic prices

The split of the latter in **separate parts for imports and domestic production** is considered a **follow-up operation** after first providing a use table in basic prices for the total economy. Thus, **tables 9.9 and 9.10** of ESA95 (regrettably missing in ESA 2010) might not be seen as central statistical tables of the basic structure, but as **analytical follow-up tables**. In particular, the **import matrix** of table 9.9 is very useful for the construction of symmetric input-output tables that should follow from the statistical supply and use tables by applying certain assumptions.

6.1.38 The first segment or sub-table of the use table framework to be illustrated is that of ESA table 9.7 on **trade and transport margins**. In the NNA, the margins are not confined to traditional trade and transport margins but are connected to electricity and pipeline transport activities.

Simple trade and transport margin (and other margins) table. NOK billion. 2019.

Product	Intermediate consumption by industries				Final uses by categories						Total use, purchasers prices	
	060	460	688	Total	(1)	(2)	(3)	(4)	(5)	(6)		Total
060010				0.4						1.6	1.6	2.0
460007												
684000				-							-	-
Total	1.3	5.0	3.9	198.5	181.1	-	9.3	69.4	-	77.6	337.4	535.9

6.1.39 The **row total** shows the **distribution of total margins on intermediate consumption and final uses**, and furthermore, by **main use categories**. According to 2019 figures, about 70 per cent of the margins were related to the product flows for household consumption expenditure and intermediate consumption, about 37 and 34 per cent respectively in these two main items.

Total margins by uses. NOK billion and percentages. 2019.

Uses	NOK billion	Percentages
Intermediate consumption	198.5	37.0
Household consumption expenditure	181.1	33.8
Exports	77.6	14.5
Gross fixed capital formation	69.4	13.0
Government consumption expenditure	9.3	1.7
Total uses	535.9	100.0

6.1.40 The second segment or sub-table of the use table framework to be illustrated is that of ESA table 9.8 on **taxes less subsidies on products**. The adjustment represents the difference between theoretically estimated VAT and the total paid VAT used at the aggregated level.

Simple taxes less subsidies on products table. NOK billion. 2019.

<i>Product</i>	<i>Intermediate consumption by industries</i>				<i>Final uses by categories</i>						<i>Total use, purchasers prices</i>	
	060	460	688	Total	(1)	(2)	(3)	(4)	(5)	(6)		Total
060010				-							-	-
460007												
684000				-							-	-
Total	0.0	0.9	7.6	98.3	219.0	0.0	4.9	76.8	-	0.0	300.7	398.6

6.1.41 The **row total** shows total **taxes less subsidies on products** distributed on flows of **intermediate consumption** and final uses, and furthermore, by **main use categories**. Almost half of total taxes less subsidies on products relate to the flows of household consumption expenditure.

Taxes less subsidies on products by uses. NOK billion and percentages. 2019.

<i>Uses</i>	<i>NOK billion</i>	<i>Percentages</i>
Intermediate consumption	98.3	24.7
Household consumption expenditure	219.0	54.9
Exports	0.0	0.0
Gross fixed capital formation	76.8	19.3
Government consumption expenditure	4.9	1.2
NPISHs consumption expenditure	0.0	0.0
Total uses	398.6	100.0

6.1.42 The third segment or sub-table of the use table framework is that of ESA tables 9.9 and 10 combined and shows the **basic prices' part** of the use table in purchasers' prices. By using the same framework in all tables, the elements of the use table in basic prices are arrived at by subtracting corresponding elements from the margins table and from the taxes less subsidies on products table from the corresponding elements of the use table in purchasers' prices. The row total of the margin table, however, must be added into the row total in basic prices to include services created by margins and to offset the deductions on the flows of goods.

Use table in basic prices. NOK billion. 2019.

<i>Product</i>	<i>Intermediate consumption by industries</i>				<i>Final uses by categories</i>							<i>Total use, basic prices</i>
	060	460	688	Total	(1)	(2)	(3)	(4)	(5)	(6)	Total	
060010				57.0					-4.5	248.3	243.8	300.8
460007												203.2
684000					185.8						185.8	185.8
Total	56.2	96.7	63.3	2783.3	1274.6	85.5	862.8	881.4	105.7	1292.2	4502.2	7285.9
Net taxes on products	0.0	0.9	7.6	98.3	219.0	0.0	4.9	76.8	-	0.0	300.7	398.6
Total pur- chasers prices	56.2	97.6	70.9	2881.6	1493.6	85.5	867.7	958.2	105.7	1292.2	4802.9	7684.5
<i>Value added components</i>												
A	41.3	78.2	0.0	1733.2								
B	7.1	-1.6	7.6	-25.8								
C	406.9	43.9	142.2	1457.4								
Value added	455.2	120.5	149.8	3164.8								
Output	511.4	218.1	220.7	6046.5								
<i>Supplementary info</i>												
GFCF	178.0	12.2	196.8	958.2								
Labor inputs	38.1	158.3	-	4011.6								

6.1.43 For **another illustration** of this value component system, **some typically taxed and subsidized products** for household final consumption expenditure are shown:

Household consumption expenditure of four NNA-products. NOK billion. 2019.

<i>Value components</i>	<i>Milk and cream</i> <i>105 100</i>	<i>Beer</i> <i>110 500</i>	<i>Petrol (gasoline)</i> <i>192 210</i>	<i>Electricity to households</i> <i>351 110</i>
10	5.9	3.7	7.2	16.2
11		5.5		
12				
14	1.8	1.6	0.6	17.3
15			3.1	6.6
16				
17	1.2	2.7	2.7	9.0
18				
19	8.9	13.5	13.6	49.1

6.1.44 The commodity flow system part must be supplemented by some further information in order to obtain the basis for ordinary national accounts tables and the input-output tables, i.e., supply and use tables as well as symmetric input-output tables. Most important **supplements** are the **components of value added by industry**, i.e., compensation of employees, consumption of fixed capital, other taxes on production, other subsidies on production, operating surplus and mixed income. Other supplements by industry to the use table are **gross fixed capital formation** and **labor inputs** that are also part of the NNA, and **fixed capital stock**.

6.1.45 The actual supply and use tables in Norway - compiled on annual basis - are **not published in all details**. The level of details is indicated in the classification chapter, in particular concerning products, industries, and categories of uses.

6.1.46 From the supply and use tables, **symmetric input-output tables** are constructed **on an annual basis**, according to the framework of the ESA 2010 Transmission Program.

6.1.47 Balancing adjustments are fed back to basic sources in a number of cases, and also, source statisticians are consulted before these adjustments are made.

6.1.48 In reference to the question of **storing balancing adjustments**, from 2005 detailed process tables for all supply and use components are compiled and designed to supply the Eurostat Process table with aggregated data. These process tables are now compiled annually. As to the individual adjustments there is also a log including explaining text kept with each NNA annual version.

6.2 Other approaches used to validate GDP

6.2.1 Other approaches are also used to validate the estimates of GDP or GNI. It should be emphasized that **integration** has been a strong motivation to broaden and harmonize the estimates of the "satellites" of **labor accounts** and **balance of payments** with those of the central national accounts. The finalization and publishing of labor accounts, balance of payments, and national accounts are thus made by the same unit of national accounts in Statistics Norway, and by use of the same data and coding structures (systems).

6.2.2 The history of **Labor accounts** in Norway goes back to second half of the 1980s when Statistics Norway introduced new and comprehensive employment figures in the national accounts, inspired by principles and concepts from labor accounting systems (LAS). Among the new elements introduced were estimates on total hours worked and distribution of employment by sex. Consistent employment figures have been estimated back to 1962. The **Norwegian approach** is characterized by being integrated in the national accounts. It focused initially on employed persons, while concepts like jobs and filled posts were not used. Initially there was no explicit treatment of persons with more than one job, due to shortcomings in the statistics. It follows that characteristics like shift system, pay system and amount of compensation of employees were related to employed persons and not to posts or jobs. Following the 2006 main revision however, now also jobs have been included as characteristics in the Labor accounts. The labor accounting system in the Norwegian national accounts do not comprise unemployed persons and persons outside the labor force. However, consistent estimates for these concepts are provided by the Labor Force Sample Surveys, a link that is utilized in labor market analyses. Data on vacancies are not utilized in this system. The Norwegian approach contains estimates on **total hours worked**, however, in agreement with the general LAS-structure. The aim is to estimate **hours actually worked**, but the distinction between hours worked and hours paid for is not always clear. **Sex** was the only demographic variable introduced in the Norwegian employment figures until mid-1990s, while later **education** has been introduced into the system as well. Breakdown of employed persons is also made in the context of regional accounts, i.e., regional breakdowns in the NA by county. An updating or reorganization of the Labor Accounts took place with the 2006 main revision, introducing also **jobs** as a specified variable.

6.2.3 The way labor accounts are seen as a means for validating the GDP figures is described in more detail in chapter 7 on **exhaustiveness**. This issue is also outlined in the employment section of section 1.7 in the overview chapter.

6.2.4 Balance of payments (BoP) in Norway has long traditions of being integrated with the Norwegian national accounts. Principles and definitions are in full accordance with corresponding international rules for the presentation of the National Accounts. The Norwegian BoP is generally consistent with the overall conceptual framework of the Balance of Payments Manual, 6th edition, although some of its new definitions have not yet been introduced, e.g., processing abroad. These will be introduced in a major revision in 2022. Statistics Norway is responsible for producing and publishing both the NA and BoP statistics, reflecting the view that the **BoP** in principle is **the mirror of the Rest-of-the-World account** in the NA statistics. The BoP tables have been presented as part of the NA tables and publications. And descriptions of the BoP compilation methods have been included in the NA methodology publications.

6.2.5 The latest aspect of true integration between the two systems is the full integration in the software systems of compilation. Technically speaking, the **same IT system** is now used for the **current production of both the BoP data and the NA data**. By introducing a joint data structure, classifications, and coding systems on a detailed level, and using the same set of estimation procedures and rules for the calculation of values of corresponding variables in the two statistical systems, data for both the BoP and the NA tables are extracted from one joint data base.

6.2.6 An important incentive behind integration is to utilize all relevant information from the other institutional sectors, and thus to **ensure consistency** between the **Rest-of-the-World account**, and the **BoP, and the other sectors** in the institutional sector accounts. This opens for the possibility to make systematic evaluation and plausibility checks on the BoP data within a consistent macro-economic accounting framework. For example, assessment of exports and imports of services flows at current prices can be made within the NA price and volume decomposition model.

6.2.7 The **integration of exports and imports** items of the BoP with the corresponding items of the NA is made possible through the detailed supply and use tables for products combined with a **detailed commodity-flow system**. For other items on the current account, a separate but quite similar balancing system is used.

6.2.8 Another area of validating GDP is **value added tax (VAT)**. A very interesting check between theoretical VAT calculated in the national accounts and actual VAT recorded in the government accounts is referred to. Main results of this kind of check show normally a quite stable difference in the area of 2 - 4 per cent. The small and positive differences demonstrate that more activities are covered than are evidenced by the taxation authority. Statistics Norway believes that the size of these differences is reasonably well in their context as checks to ensure exhaustiveness. Although the 2006 main revision introduced the concept of time-adjusted government accounts VAT figures in the NNA, the technical system generating theoretical VAT were kept for plausibility check purposes. In 2019 the difference was 3.5 per cent.

6.2.9 Although the GNI Inventory is confined to the NA estimates in current prices, thus important to the evaluation of the current-price estimates, it is also important for the process of deflation to arrive at constant-price estimates, and to make **comparisons between volume changes in the NA and other volume data available**. The data in the NNA are generally compiled in sequential order, first in current prices, then in constant prices. However, sometimes adjustments back to current price data are being made after analysis of the constant-price estimates.

CHAPTER 7 OVERVIEW OF THE ALLOWANCES FOR EXHAUSTIVENESS

7.0 Introduction

7.0.1 For explanation of the **Norwegian geographical and economic territory**, see chapter 1, paragraphs 1.1.18 – 1.1.21.

7.0.2 The aim of chapter 7 is to bring together the explanations given elsewhere in the inventory on the allowances made for **exhaustiveness**, in order to give this issue due prominence and to ensure that as good a case as possible is made for the exhaustiveness of GNI. First, it addresses the **Commission Decision on Exhaustiveness** (Titles III, IV, V and VI). Second, there are particular subject areas having been dealt with by task forces. These subject areas address best practices for achieving exhaustive estimates in **construction, distribution**, and using **household budget surveys**, and for overcoming the problems posed for the national accounts by the introduction of **Intrastat**. Third, the issue of **illegal activities** is dealt with here to inform that the first results have been achieved in the areas of prostitution, illegal drugs and smuggling covering the years 2002 onwards. These results have been included in the NNA figures in the 2011 main revision. Fourth, the Tabular Approach scheme has not been taken on board in the national accounts compilation but might be dealt with in the future.

7.0.3 On the Commission Decision on Exhaustiveness, **Title III** - when introduced in the mid-90s - relates to the **existing calculations and adjustments made to ensure exhaustiveness** of the GNP (later GNI) estimates. For Norway, this has been summarized below in four parts. First part addresses the **general approaches** used to ensure that the estimates of production are exhaustive. Thus, for example, it discusses the completeness of the sources used, the grossing-up of statistical surveys and the use of the business register. Second, it summarizes explicit and implicit adjustments that are made for **exhaustiveness in the production approach**. Third, it discusses methods used to ensure the **exhaustiveness of the expenditure approach**. And the final part outlines the **checks** that are made on the resulting estimates of GDP and GNI and their components.

Title III

General approaches

7.0.4 In identifying population for most economic surveys that are undertaken, **Statistics Norway's Business Register (BR)** has played a crucial role in the context of exhaustiveness. In principle, the Business Register comprises all production units, i.e., all units that are relevant for economic statistics by industry are included today. Each unit in the BR is identified by a unique **organization number**. This contributes to more efficient use of administrative data. The updating of units is mostly based on administrative registers, e.g. *Brønnøysund registeret*, the Value Added Tax Register, and *A-ordning*. Statistical units employed today are enterprises set equal to legal units (LeU) and local KAUs (LKAU). Statistics Norway has for some years also worked with establishing enterprises that may consist of more than one LeU. Adding LKAU on national level gives the information of KAU. However, the individual activity must be of a certain size before a local unit is divided into several different local KAUs. The statistical information - confined to employment and turnover data - of the registered units in the Register is normally updated through main surveys (e.g., Structural Business Surveys) or administrative registers. The business register has a general cut-off threshold set at NOK

50 000 (EURO 5000) in annual turnover. Units below this threshold are not covered by the VAT Register, which is used for updating units in the BR. This shortcoming is assumed to be of minor importance, although there are no studies available trying to quantify the missing value. It should be emphasized that the BR is more of an **indirect source** than being a direct source of estimation for the NA. See also chapter 3.1.

7.0.5 In broad terms, five main categories of the **types of sources** have been used when estimating GDP by the production approach (main approach used in Norway).

- (a) **Structural Business Statistics (SBS)** or other of **annual production statistics** termed as **accounting statistics** -are collected for fish farming within NACE A, all industries within industries NACE B – NACE J, real estate activities within NACE L, all industries within NACE M and NACE N and repair of computers and personal and household goods and other personal service activities (except prostitution) within NACE S
- (b) **Supervisory data** are used for financial intermediation (insurance included)
- (c) **Functional estimates** (prices x quantities) are used for agriculture, forestry, fishing and dwelling services
- (d) **Estimates from the costs side** are used for central and local government and for non-profit institutions serving households (NPISHs)
- (e) **Annual reports and miscellaneous sources** are used for other industries within services.

7.0.6 For **source category (a) - production statistics** - the **annual sources** referred to as production statistics are **census-based, register-based or otherwise fully covered through accounts** and the like. The current situation is availability of full coverage through the census like the accounting-based SBS for most of the industries. In addition, full coverage directly applies for other important industries (e.g., fish farming, extraction of crude petroleum and natural gas, electricity, gas and water supply, and pipeline transport). On the cost side estimates for general government resting on full set of government accounts and supervisory data for financial enterprises also give full coverage. The question of various quality problems related to fraud etc. can thus be seen as a question belonging to the project of estimating illegal activities. Results from this project was incorporated in the NNA as part of the main revision in 2011.

7.0.7 **Category (b) - supervisory data** - is relevant for financial intermediation including insurance. **Functional estimates - category (c) or prices x quantities** - are used for agriculture, forestry, fishing and dwelling services. Although the data sources for agriculture and forestry are available in value terms in Aggregate account of agriculture and Aggregate account of forestry, they are basically calculated on a price x quantity basis. This approach is also followed for fishing (except fish farming), where catch statistics contain detailed data on quantities and values by fish species. Even more significantly, the estimation of dwelling services for own final use belongs to this category, as rents data and time series for stock of dwellings in square meters (and their values) are involved.

7.0.8 The use of **estimates from the costs side - category (d)** - reflects the normal approach of estimation for central and local government and for non-profit institutions serving households - important in Norway. The last **category (e)** consists of other types of sources, such as **annual reports and miscellaneous sources**. They cover various parts of market service activities, i.e., education, health and social work, part of other community, social and personal service activities, and also private households with employed persons.

7.0.9 Important characteristics of the Norwegian National Accounts include input-output framework integrated on annual basis, supply and use tables built around commodity flows, detailed breakdown of most variables, and the role of national accounts as long-established tool in integrating and coordinating economic statistics.

7.0.10 Approaches used to calculate GDP are further described in the Inventory as multi-dimensional. The production approach through the strong emphasis on industrial breakdown is regarded as the main approach. The expenditure approach is also much used through the supporting use of the commodity flow method. The income approach has played a minor role but will have a more decisive role with the development of complete accounts in integrating accounting approaches by sectors. And most important, the product dimension - with the balancing of supply and uses of each product - is a very well-built element in the Norwegian approach to national accounting.

7.0.11 Balancing at both current prices and constant prices at detailed level has been an important check to ensure exhaustiveness. Balancing at constant prices - a topic not described in the Inventory - uses the same framework of integrated supply and use tables at current prices, by deflating current values by price indices at the detailed product level. The **deflation approach** has in fact two dimensions:

(i)	Differentiated by main categories of supply and use (deflating output, imports, exports and implicitly domestic use)
(ii)	Differentiated through valuation (deflating current values at basic prices by price indices and implicitly determining the other value components, including adjustments against values at purchasers' prices).

7.0.12 Constant-price estimates for aggregates of supply, uses, and value added follow through adding up and balancing constant-price estimates of products. They include aggregates such as output by industry, categories of exports and imports, categories of other final uses, intermediate consumption by industry, value added by industry and GDP. This entails that **the principle of double deflation** is used through a detailed input-output framework (supply and use tables). The condition of great details is linked to the condition that the individual products are as price homogeneous as possible, with a possibility for adapting to basic statistics available for values as well as prices.

7.0.13 It should also be added that Statistics Norway adopted **the principle of annual chaining** already around 1990, and that chaining is carried out separately for all items (with a few exceptions). Thus, constant-price estimates are calculated at prices of the previous year, and base year is thus changed every year. Subsequently, data on changes of volume are constructed in terms of growth rates and corresponding implicit data on changes in prices. In parallel, time series are constructed in constant 2015-prices, at present using 2015 (= 100) as a reference year. The reference year is chosen in response to international recommendation advocating the use of years ending at 0 or 5 as of reference.

7.0.14 In describing **value added tax (VAT)** - a quite interesting check between theoretical VAT calculated in the national accounts and actual VAT recorded in the government accounts should be referred to. Main results of this kind of check are a difference of 3.7 per cent on average for the period 2000 - 2012 when using time lag adjusted government accounts figures. The difference for individual years was quite stable in the first part of this period, in the area of 3 - 5 per cent, but with more variation during the last years of the period. For the years 2008 and 2009, in the wake of the financial crisis, the difference was over 6 per cent. For the year 2019 the difference is 3.5 per cent. The positive - but rather small - differences demonstrate that more activities are covered than are evidenced by the

taxation authority. Statistics Norway believes that the size of these differences is reasonably well in their context as checks to ensure exhaustiveness. Studies and comparisons made in all previous main revisions have confirmed the picture given above. Although the Eurostat concept of accrued VAT has been adopted since 2006, the system for estimating theoretical VAT was kept operative for plausibility check purposes in the NNA.

7.0.15 Another important check on the level of GDP is provided by the comparisons of the national accounts estimates of **employment and compensation of employees** with the same estimates in the labor accounts. This is to a certain extent dealt with in the Inventory on compensation of employees by kind of activities. Norway is in a favorable position by having labor accounts compilation integrated with the national accounts. This is elaborated below under Title IV of the Commission Decision on exhaustiveness.

7.1 Allowance for exhaustiveness in the production approach

7.1.1 In 2019 **total adjustments made to ensure exhaustiveness from the production approach** added to NOK 24.2 billion, or **0.7 per cent of GDP** and GNI. Adjustments were highest in construction, accommodation and food serving services, other services, and transport and storage. In the remaining paragraphs of this section, the results of this exhaustiveness study are reviewed by industry. But first an overview is presented in the following table:

Adjustments for exhaustiveness NACE section. NOK billion and per cent of GDP. 2019.

<i>NACE section</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
A - Agriculture, forestry and fishing	-0.1	0.0
B - Mining and quarrying	0.0	0.0
C - Manufacturing	0.0	0.0
D - Electricity, gas, steam and hot water supply	0.0	0.0
E - Water supply, sewerage, waste management and remediation	0.0	0.0
F - Construction	11.8	0.3
G - Wholesale and retail trade, repair of motor vehicles and motorcycles	0.0	0.0
H - Transport and storage	2.6	0.1
I - Accommodation and food service activities	6.2	0.2
J - Information and communication	0.0	0.0
K - Financial and insurance activities	0.0	0.0
L - Real estate activities	0.0	0.0
M - Professional, scientific and technical services	0.0	0.0
N - Administrative and support service activities	0.0	0.0
O - Public administration and defence, compulsory social security	0.0	0.0
P - Education	0.0	0.0
Q - Health and social work	0.0	0.0
R - Arts, entertainment and recreation	0.0	0.0
S - Other services	3.6	0.1
T - Private households with employed persons	0.0	0.0
Total	24.2	0.7

7.1.2 For NACE A - **Agriculture, forestry and fishing** - most important adjustment for improving exhaustiveness includes agricultural production for own consumption in other households than farmers' households (fresh fruit in particular) and own consumption of fish. Other adjustments made include reindeer production, services from kennel activities not covered by basic data, and services incidental to forestry and logging, like timber scaling, spraying the trees and forestry management planning. Also added are estimates on cannabis production (negligible figure).

7.1.3 For NACE B - **Mining and quarrying, extraction of crude petroleum and natural gas** - adjustment for foreign ownership faced with border fields with the UK in the North Sea might be considered an issue of exhaustiveness.

7.1.4 For NACE C - **Manufacturing** - no adjustments are made.

7.1.5 For NACE D - **Electricity, gas, steam and hot water supply** - adjustments were made to cover inland supply of gas through mains, which is still a minor activity.

7.1.6 For NACE E - **Water supply, sewerage, waste management and remediation** - no adjustments to the sources were done from the point of exhaustiveness.

7.1.7 For NACE F - **Construction** - adjustments for exhaustiveness of considerable effect were made for own-account construction of buildings. This relates to existing dwellings (major improvements and the like), but also to own-account construction of new dwellings and on cottages, summer houses etc. Also, adjustments for exhaustiveness related to construction market activities have been made. These adjustments are based on reports from both tax authorities and private research institutes (Frisch-sentre).

7.1.8 For NACE G - **Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods** – estimated output and value added related to distribution of illegal drugs and smuggled alcohol has been added to the statistical sources. Besides this, no adjustments to the sources were done from the point of exhaustiveness.

7.1.9 For NACE H – **Transport and storage** - adjustments were made to certain areas, in particular for taxi operation. Free transport was estimated in railway transport based on experts' view and other considerations, and it was added to output. Additions were not made to compensation of employees since income related to payments in kind has to be declared to the tax authorities.

NACE H. Adjustments for exhaustiveness. NOK million and per cent of GDP. 2019

<i>Industry</i>	<i>Income in kind (free travel)</i>	<i>Tips</i>	<i>Unregistered activity</i>	<i>Total</i>	<i>Per cent of GDP</i>
Railways	258			258	0.0
Taxis		272	1 324	1 595	0.0
Total NACE H	258	272	1 324	1 853	0.0

7.1.10 For NACE I - **Hotels and restaurants** - adjustments were made to improve on canteen and catering services and restaurant services, including adjustments for tips.

7.1.11 For NACE J - **Information and communication** - no adjustments based on exhaustiveness considerations were made.

7.1.12 For NACE K – **Financial intermediation** - no adjustments based on exhaustiveness considerations were made.

7.1.13 For NACE L – **Real estate activities** – no adjustments based on exhaustiveness considerations were made.

7.1.14 – For NACE M – **Professional, scientific and technical services - Education** - no adjustments based on exhaustiveness considerations were made.

7.1.15 For NACE N – **Administrative and support service activities** – no adjustments based on exhaustiveness considerations were made.

7.1.16 For NACE O – **Public administration and defense** – no adjustments based on exhaustiveness considerations were made.

7.1.17 For NACE P – **Education** – no adjustments based on exhaustiveness considerations were made.

7.1.18 For NACE Q – **Health and social work** – no adjustments based on exhaustiveness considerations were made.

7.1.19 For NACE R – **Arts, entertainment and recreation** – no adjustments based on exhaustiveness considerations were made.

7.1.20 For NACE S – **Other services** – explicit exhaustiveness adjustment was made for hairdressers and for prostitution.

7.1.21 For NACE T – **Private households with employed persons** - no adjustment for exhaustiveness was made to the *A-melding* (in Norwegian) data used.

Title IV

Employment underlying the GNP (GNI) estimates and alternative estimates of employment

7.1.22 Title IV of the Commission Decision on Exhaustiveness concerns **employment** as a key variable for **ensuring the exhaustiveness** of the national accounts. Eurostat is referring to a process **in four steps**, i.e., (i) defining employment underlying GNP (GNI), (ii) standardizing the definition of employment, (iii) assessing the employment comparisons, and (iv) assessing the impact on GNP (GNI).

7.1.23 The Decision requires comparisons of the **employment data according to demographic sources** with the **employment estimates underlying the GNP (GNI) estimates**. This involves standardizing the definition of employment for the comparison on that of the domestic occupied population. The demographic data sources used are the **Labor Force Survey (LFS)** and the **Population Census**. The rationale behind this kind of comparison is the recognition that employment is a key variable for ensuring the exhaustiveness of the national accounts. If the same statistical sources used to estimate production and value added for the national accounts can also be used to yield an estimate of employment, then employment estimate can also be assessed for completeness against the estimates of employment available from demographic sources. If the comparison should show a deficiency in the employment estimates underlying the national accounts, then there may well be grounds for believing that production and value added are also understated in the national accounts. If the comparison shows no such deficiency, then one likely conclusion is that the national accounts cover at least employment exhaustively.

7.1.24 **Statistics Norway** already has over 30 years of experience in constructing **Labor Accounts (LA)** data which have been a fully integrated part of the national accounts all these years. The main concern expressed in the Title IV of the Commission Decision on Exhaustiveness therefore has already been addressed when constructing the Labor Accounts of Norway, as comparisons of this kind are vital to that task. Furthermore, the LA work not only has involved validating employment data, but also **validating employment and wages and salaries data** altogether in an **integrated approach**. It means that the Norwegian national accounts estimates, through this integrated approach, are reviewed against both **demographic employment data sources** (as requested in Title IV), and against **vital register data** obtained from the employers on wages and salaries as reported to the *A-melding*, the data source which also are used by the Tax Authorities.

7.1.25 **Consistency considerations** play an important role in estimating employment in the Norwegian national accounts. Since the framework generally applied to the compilation of national accounts is the annual supply and use tables, detailed employment data by branch (industries) are considered adjacent information of the same format as that of compensation of employees. Furthermore, employment data for employees are fully consistent with the data on compensation of employees due to the fact that they are reported simultaneously to the *A-melding*, the variables for jobs remuneration reported together with the jobs themselves. The number of resident employees in the NA are finally controlled against the number of employees in the LFS, resulting in insignificant differences. In Norway, therefore, the estimation of **employment** is **closely linked** to the estimation of **compensation of employees** and to **production** (output and value added). These are all estimations carried out in the NA unit, thus reviewed and discussed with a view to reach a best possible consistency.

7.1.26 The Labor Accounts (LA) should be looked upon as an essential and **integrated part of the National Accounts**. It was established in Norway in the last half of the 1980s. **Three basic employment measures** were introduced: **employed persons, full-time equivalent persons, and total hours worked**. The three types of employment concepts are linked by a set of relationships to a consistent system and are specified according to **industry** and **status** (employees or self-employed). Part-time workers, conscripts and persons temporarily absent from work are included in the employment concepts. This is in line with definitions used in LFS and ESA 2010.

7.1.27 The method for the compilation of the number of employed persons is as follows: 1) All jobs having existed for at least 1 month during the year according to the *A-melding* is identified. For each job the number of months which the job has existed during the year is calculated alongside the total remuneration in cash. 2) The information regarding jobs are transferred to the owners of the jobs, hence a list of all persons having held one or more jobs at least one month are listed, together with the number of months the person has held at least one job and the total remuneration in cash for the jobs held during the year. 3) By use of the register of all self-employed jobs (the register used for the calculation of mixed income in the household sector), all such jobs are identified as well as the mixed income for each job. The total mixed income for each person is registered. 4) The two lists of persons are matched by the personal identity number according to the central register of the population. 5) Three groups are at first identified; persons holding at least one employee job, but no self-employed job, b) persons having held both employee job and self-employed job and c) persons having held at least one self-employed job, but no employee job. From group a) the number of employees on a yearly basis is decided by the number of months each person having had a job. One or more jobs in all 12 months of the year results that the person is regarded as 1 employee in the yearly NA. In case the person has only held job for 1 month during the year, he/she contributes at 1/12 employees in the yearly accounts. For group c) the same type of method is applied though it is the size of mixed income that is used in the valuation of employment. Persons in this group having earned at least 65 per cent of average annual pay for full-time equivalent employee jobs are considered as 1 self-employed in the yearly accounts. For the persons in group b), those having held both employee job and self-employed job during the year, their status and valuation are done according to the level of income earned in the two types of jobs. 6) In the final stage, the number of the estimated resident employment are

controlled according to the LFS, and after care is taken for the effects of differences in age groups covered. Adjustments are done if the discrepancies are clearly higher than allowed for due to the associated sampling error in the LFS.

7.1.28 In the Norwegian system, **LFS is the main determinant source for the total number of resident employed persons** in the national accounts. This restriction was introduced based on the fact that LFS is more reliable the more aggregated are the measures.

7.1.29 Statistics Norway has conducted quarterly **Labor Force Surveys (LFS)** since 1972. The concepts and definitions are in accordance with recommendations given by the International Labor Organization (ILO). The reference period from 1997 is altered to a system of continuous reference weeks as far as data collection is concerned. In the period 1988 - 1996, the reference period was one week each month, while one survey week each quarter before 1988. Persons aged 16 - 74 (later amended to 15 - 74) are classified as employed persons, as non-employed persons seeking work, or as persons not in the labor force. Employed persons comprise persons at work (at least one hour in the reference week), persons temporarily absent from work (due to illness, holidays etc.), and persons doing compulsory military service.

7.1.30 The **sample of persons underlying the LFS** has gradually been expanded. Since 1990, it consists of about 24 000 persons, which correspond to about 0.7 per cent of population aged 16-74 years (from 2006: 15 - 74 years). The annual estimates are arithmetical averages of the quarterly estimates. Employed persons are classified by sex, age, marital status, region, industry (ISIC until 1996 when NACE Rev.1 was introduced, and further NACE Rev.2 in 2008), status (self-employed or employees), occupation and education. Settled and actual working hours per week are both estimated in the LFS. So is also secondary employment.

7.1.31 A first comparison between the **national accounts estimates on total persons employed** and the **corresponding totals in the LFS** shows discrepancies in the order of 1 - 4 per cent, highest for the latest years. The LFS totals are however lower than the national accounts estimates, with difference varying from 16 000 to 112 000 in the period 2000 - 2012. The main reason for this kind of difference is that **foreign seamen** in ocean transport and **non-resident workers on short-term stay** are included in the employment estimates of the national accounts, while excluded in the labor force surveys. The growth in the number of non-resident workers on short-term stay was particularly strong after the **expansion of the EEA in 2004**.

Employment in Labor Force Surveys and National accounts. 1000 persons.

	<i>National accounts</i>	<i>Labor Force Survey</i>	<i>Difference</i>
2000	2315	2269	46
2001	2317	2278	39
2002	2319	2286	33
2003	2285	2269	16
2004	2292	2275	17
2005	2319	2289	30
2006	2396	2355	41
2007	2490	2437	53
2008	2570	2505	65
2009	2559	2495	64
2010	2552	2498	54
2011	2589	2542	47
2012	2642	2583	59
2013	2672	2602	70
2014	2670	2624	76
2015	2710	2639	71
2016	2717	2638	79
2017	2748	2647	101
2018	2792	2695	97
2019	2836	2724	112

7.1.32 The following table shows the transition from the national concept of the LFS to the domestic concept in the NA for the year 2019.

Employment. National and domestic concepts. 2019.

<i>Employed persons according to:</i>	<i>1000 persons</i>
Labor Force Survey (national concept)	2 724
+ non-residents with resident employer	89
- foreign sailors on Norwegian vessels	14
- foreign workers on short-term stay in Norway	75
- residents with non-resident employers	6
= National accounts (domestic concept)	2 807
Deviation	29

The deviation constitutes 1.0 per cent of total employment in the NA and reflects the fact that there are no age-limit in the definition of employment in the NA, while employment is limited to the age group 15-74 years in the LFS. The central source for employment in the NA picks up employment due to *inter alia* board membership, a type of job often held by persons over the age of 74. As mentioned before, the fact that LFS is affected by the sampling error, varying from year to year, is also a source for the deviation.

7.2 Allowance for exhaustiveness in the expenditure approach

7.2.1 Adjustments to the expenditure approach have been made to ensure exhaustiveness, e.g., those to **Household consumption expenditure** explicitly as part of the **NNA main revisions**. As the Norwegian approach to estimating household consumption expenditures for years between the main revisions is more based on extrapolation and the commodity flow method in place of the tabular approach, the adjustments can be explicitly articulated for the benchmark year only. **Household final consumption expenditure** can be said to be increased from given adjustments for exhaustiveness. Items under consideration have in particular been the following: agricultural production for own final use; free transport in transportation; adjustments to data on taxi operation; tips in accommodation and food serving services; addition for secondary dwelling services; hairdressing services etc. Minor adjustments to household consumption involved also activities of the reindeer industry, fish for own consumption. **Illegal activities** have been estimated and included, meaning for instance that there are estimates made for household consumption expenditure of illegal drugs, smuggled spirits and prostitution services.

7.2.2 Final consumption expenditure of NPISHs has had a **weak source basis** and is still mainly estimated from indirect use of government accounts, such as distributive flows of grants etc., with due account taken to fees from households and others. In the effort of broadening the accounts of the NPISH sector, the possibilities have been explored for estimating final consumption expenditure of NPISHs in a more direct way, e.g., based on the Johns Hopkins project involvement in the late 1990s and also through **accounting statistics** for relevant industries. **Final consumption of the NPISHs** has been affected from three items which might be looked upon as adjustments of exhaustiveness: services of catastrophic and aid institutions estimated from the use side; part of ambulance services; and communal work for/and sporting services. Also new information from a recent study on voluntary work to be utilized for the newly established satellite account are of importance.

7.2.3 **Gross fixed capital formation** has been affected by the adjustments made on including own-account construction of dwellings (new and existing dwellings). For 2019, the annual administrative source used for SBS was influenced by the implementations of the new accounting standard IFRS 16. The SBS were not adjusted for these effects, and therefore some appropriate adjustments have been done in the calculations of the NNA figures (see section 3.4).

7.2.4 **Exports** were affected through **adjustments to cross-border oil and gas fields** according to ownership in the North Sea. Estimations of exports and **imports** of dwellings services related to **second homes abroad** can also be mentioned.

7.2.5 **Household final consumption expenditure** is estimated from a composite set of sources and methods as described in detail in the Inventory. Improving exhaustiveness when searching for a best choice of sources and methods involves the review of the sources that are available, and steps that are taken accordingly to improve the estimation. For instance, household budget survey data are not utilized when evident loss of coverage is existent, such as for alcoholic beverages, tobacco and for some other consumption goods. Exhaustivity has also been influenced from the revised estimates of trade margins and use of wholesale and retail trade statistics. **Improvement in exhaustiveness** thus has been achieved through the revised estimates of both household consumption and output of wholesale and retail trade. However, there has been room for more improvement to the exhaustivity of the total estimate of household consumption expenditure.

7.2.6 In the area of **illegal activities**, estimates are made and implemented for COICOP items of **prostitution, narcotics and smuggling**. The estimates are the results of a research project carried out

by Statistics Norway a few years ago, and the results were introduced in the NNA in the 2011 main revision.¹⁰

7.2.7 Regarding **prostitution** the time series for the years 2002-2007 was derived from point estimates for the year 2008. The estimate for 2008 is mainly based on information about the resident prostitution market in a study carried out by the *Institute for Labour and Social Research – Fafo* (Tveit and Skilbrei, 2008)¹¹.

7.2.8 Total supply of prostitution services in Norway is estimated using the following equation:

Total supply = Number of prostitutes working (each 24 hours) x Average **number of customers** per 24 hours x Average **price per service**

This calculation is done for each of the market segments

- Street prostitution

- Indoor market

7.2.9 The supply is further separated into residents' output and imports respectively. Imports, in this connection, is prostitution services offered by persons not considered to be resident in Norway, using the common national accounts' definition of the term *resident*. Resident people's use of prostitution services abroad is not included. Likewise, resident people's supply of prostitution services abroad is not included in output.

7.2.10 Households consumption of prostitution services is then equal to total supply (resident output and imports) minus an assumed minor share of output related to exports.

7.2.11 For the part of total supply that is classified as resident output, estimates are made for intermediate consumption and value added.

7.2.12 The estimates for the year 2008 for different components in the estimation process have been developed backwards to 2002 and for 2009 and forward by using indicators for the volume and price development. These indicators rely upon figures from the *Pro Senteret* that provide information about the development in the number of prostitutes in each of the market segments, as well as other information about the development (Pro Senteret and Tveit and Skilbrei, 2008). After 2008 there has not been conducted any new thoroughly study of prostitutions services in Norway like the one from 2008, and therefore it has so far not been meaningful to calculate new point estimates.

7.2.13 As for the calculations related to drugs, no complete and consistent information on the use of drugs exists, but fragmented information is available on some of the abuse or parts of the drug market in Norway, mainly in different research reports from *the Norwegian Institute for Alcohol and Drug Research (SIRUS)*¹² and sample surveys among the general population on use of drugs conducted by SIRUS etc. KRIPOS¹³ (the national criminal police) publishes figures on the number of seizures and seized quantities broken down into the different types of drugs, and also holds other information on resident use and markets.

7.2.14 Estimates for demand (volume calculations) are based on the following calculation model:

¹⁰ Documentation of calculations are published in the report (in Norwegian only) Evensen, Trude Nygård (2011): [Illegal Økonomi i nasjonalregnskapet](#), Notater 2011/16, Statistisk sentralbyrå.

¹¹ <http://www.fafo.no/index.php/nb/zoo-publikasjoner/fafo-rapporter/item/mangfoldig-marked>.

¹² <http://www.sirus.no/english/>.

¹³ <https://www.politi.no/kripos/statistikk/>.

Total use = Number of drug users x Estimate for average frequency of use x
Estimate for average user doses

This calculation is done for different kinds of user segments

- Heavy abusers (addicts who inject)

- Other users (to some extent separated into sporadic and experimental users)
and for different types of drugs.

7.2.15 With regard to the use of heroin, the estimate is mainly based on calculations of user volumes, worked out by SIRUS (Bretteville-Jensen and Amundsen, 2009)¹⁴. For the calculation of values (NOK), the estimated volumes are multiplied by estimates for average user prices. The price estimates are based on various price data from the Norwegian Police, but the price profile is very fragmented in which case the estimates must be regarded as uncertain.

7.2.16 Finally, the total supply (equals total use) is decomposed into import, trade margin (residents' output) and residents' production of drugs (a very limited cultivation of cannabis) in Norway. The estimation of import is based on estimates for import prices for different types of drugs combined with the volume calculations for use of drugs.

7.2.17 Time series for drugs has been extrapolated using updated information of heavy users and of more occasional use from an annual survey. The survey shows the percentage of people who have tried different drugs in the past year. We also get annual information from the police about prices. It is assumed that variables like user doses and frequency of use for different drugs are the same.

7.2.18 For use in the NNA, estimates of **smuggling** have been restricted to estimates on smuggling of alcohol (spiritus/bootleg). Supply side information on seizures made by the Customs services is combined with information on unregistered consumption of alcohol (SIRUS) to reach an estimate on the volume of smuggled alcohol.

7.2.19 There are no surveys or other systematic information available on prices for bootleg. Instead, both the Police and the Customs service have been contacted to possibly shed some light on such prices. The Directorate of Customs and excises has provided some direct information, such as 250 NOK per litre (when buying at least 10 litres) which can be considered as consumer's price. This price, in combination with time series of CPI on spirits, would give the following time series of estimates for prices on bootleg.

7.2.20 In combining the quantity and price figures above, value estimates on bootleg are arrived at for the years 2002 – 2009. The sharp drop in 2003 must be seen in the light of scandal of methanol abuse the year before. Also for years from 2010 and forward smuggling of illegal alcohol is extrapolated using seizures and inflated with CPI.

7.2.21 Like for narcotic drugs, the value of consumption of bootleg should be split on Norwegian output (trade margin) and imports for the supply side. The composition of consumer price is not known for bootleg, and we know only a little about what is earned by the actors of domestic trade in this respect. It is assumed that most of the traded value is allocated to the importer, while 30 per cent of the value is domestic (Norwegian) output. Like for narcotic drugs, no separate industry is introduced in the national accounts to produce trade margin related to bootleg trade. It is added to margin of domestic trade instead.

¹⁴ <http://www.sirus.no/publikasjon/rapporter/2009-2/forbruk-av-heroin-i-norge/>.

7.2.22 For the subsequent years following the 2011 main revision the figures for the illegal activities have been estimated using available new information from among others the above mentioned research institutes. The extrapolations used are the best available method so far. Time schedule for next benchmark estimates will depend on availability of data sources and internal resources for carrying out estimates. However in general the levels, especially due to consumption of illegal drugs, will be checked upon more thoroughly in the next main revisions of the national accounts.

7.2.23 For the year **2012** the **HBS** is in general **not used directly** or in isolation from other sources. The reason is that a steady drop in response rates made the quality of the results of the annual survey decreased dramatically in recent years, see chapter 5.7. In the benchmark estimates, wholesale and retail trade margin rates respectively have been dealt with explicitly and distributed on all relevant commodity flows. The Inventory gives information on the estimation of output of wholesale and retail trade. Searching for best choice of sources and methods also involves the use of direct volume information and the information embodied in the commodity flow system, which in itself includes a number of adjustments for improvements as obtained in the balancing process each year. Since the supply estimates - in that context - are usually considered to be the stronger side, balancing usually affects the expenditure side, and changes in inventories in particular.

7.2.24 **Government final consumption expenditure** has not been much affected by considerations of improved exhaustiveness, since government accounts are used as sources without taking into account adjustments of this kind. However, the addition to government final consumption expenditure of non-government output purchased by government as social transfers in kind for the benefit of households is an area being specially monitored, and it also concerns exhaustiveness.

7.2.25 **Final consumption expenditure of NPISHs** has had a weak source basis and is mainly estimated from indirect use of government accounts, such as distributive flows of grants etc., with due account taken to fees from households and others. More accounting data and direct approach have been used in the recent years, though. In an effort of improving the future situation, possibilities should be explored for estimating final consumption expenditure of NPISHs in a more direct way, and in this process, adjustments of improving exhaustiveness would also have to play a key role. The newly established **satellite accounts for voluntary work** can be seen as a framework for further development of both source data and national accounts data in this area, see also: <http://www.ssb.no/en/nasjonalregnskap-og-konjunkturer/statistikker/orgsat>

7.2.26 **Gross fixed capital formation** most often has an industry-related source basis, which means there are some resemblances with the estimation process of the different industries with respect to other items such as output and intermediate consumption. In the next phase, the commodity flow approach takes a substantive role. Altogether, therefore, adjustments of improving exhaustiveness play a key role here as well. In particular, the service industries sometimes lack adequate sources for the estimation of gross fixed capital formation and thus necessitate adjustments for exhaustiveness.

7.2.27 As referred to in chapter 5, acquisitions of certain other intangible fixed assets were estimated as part of the 2011 main revision. More specifically, it refers to **entertainment, literary or artistic originals** (AN.1174). Although being another category under gross capital formation, it should be added here that considerable work of improvement is foreseen on estimating acquisition less disposals of valuables properly for national accounts.

7.2.28 **Changes in inventories** have no reliable source as a basis for estimation, meaning that adjustments have been and still are made to the NA estimates in the balancing process and thereby serve to ensure better exhaustivity. A project supported by Eurostat grants concluded that neither the SBS information on inventories nor the quarterly inventory statistics can be used directly in the national accounts without further investigations and adjustments to the statistical reports themselves,

see chapter 5.11.10. New studies and research agenda considerations are needed in the years to come.¹⁵

7.2.29 Exports and imports are estimated from the external trade statistics, foreign exchange statistics, and in combination with maritime transport statistics, oil and gas activity statistics and some other sources. The close integration between national accounts and balance of payments is important and serves to ensure exhaustiveness. Certain issues of illegal activities are dealt with and included in the estimates, such as smuggling. Other issues of non-observed economy that affect border crossings are also continuously looked into in the context of improving exhaustiveness. For example, estimates are made for flows of both services and income related to the ownership to and use of holiday homes abroad.

7.2.30 The **Intrastat** problem has not been a serious problem to Norway. This is due to the fortunate and stable situation with good administrative data obtained through the customs declarations, a sound basis for establishing reliable statistics on exports and imports of goods. Supplements are made, however, as described in sections 5.13 and 5.15 above.

7.3 Allowance for exhaustiveness in the income approach

7.3.1 As a main rule, **income in kind is taxable** in Norway and due to be reported by the employers to the *A-melding*, the main source applied for the compilation of compensation of employees. There are a few tax exemptions, however (small size in terms of gifts etc.), often resulting in exemption of its reporting. The *A-melding*, the central source established in 2015 as a joint project between the central governmental institutions using data from the employers; the Central Tax Authority (*Skatteetaten* in Norwegian), the Labor and Welfare Administration (NAV) and Statistics Norway, comprises all types of payments from employers to employees. There are items that are related to employers' social contributions in particular, and can also be taken into account for the treatment in the NNA.

7.3.2 The framework for the compilation of wages and salaries in kind is the integrated **Labor Accounts**. Within this system the reported income in kind and allowances to the *A-melding* are used in the compilation of wages and salaries in kind. The reported allowances are due to cover employees outlays for goods and services to be used in the production process and are in general not considered as taxable income. In our view the allowances comprise to some extent elements of remuneration of the employees. In absence of exact knowledge, we have assumed that 25 per cent of allowances are remuneration of the employees and part of wages and salaries in kind. For the reported values for wages and salaries in kind, no additions or deductions are done, they are directly recorded as wages and salaries in kind.

7.3.3 Treatment in the NNA is indicated for 10 listed items of income in kind in the following paragraphs and reference to the *A-melding* is given when relevant. The *A-melding* information falls into **two categories**. The first consists of items that are fairly easy to allocate to wages and salaries in kind, while the second consists of items of expenditures reported as allowances that will be partly wages and salaries in kind and partly intermediate consumption.

7.3.4 The first item is **business cars used for private purposes**. Rather than the car purchase as such (purchased by employers for the purpose of at least some business driving), it is the services (use) of cars being offered free or at reduced prices that are relevant here. The two next items listed are taxable and non-taxable allowances for use of private car. The non-taxable part covers allowances

¹⁵ See Eikill and Todsen (2017), 'Changes in inventories in the Norwegian National Accounts - Accounting data as a source for changes in inventories', *Documents*, 2017/13, Statistics Norway.

according to standard central government rates, while the taxable part covers allowances above the standard rates (and all non-documented expenses).

Private use of company cars

<i>A-melding Title</i>	<i>Percentage taxable</i>	<i>Category</i>
Advantage of private use of employer's car	100	I
Allowances for use of private car (taxable part)	100	I
Allowances for use of private car (non-taxable part)	0	II
Taxable life- and accident insurance	100	I
Minor items in addition: Additional allowances for passengers and trailers, compensation for use of cars, and adjustment item on free services of vehicles		

7.3.5 Employers' contributions to the running costs of canteens implicate at least **two issues**: the first is whether economic activities of canteens are **covered or not in the NA**, and the second is, if so, how **to reallocate** the uses of such services **partly to household consumption expenditure** to reflect the advantage to employees through employers' contributions to the running costs of canteens resulting in price reductions (free or subsidized canteens). The **first issue** pertains to the secondary output of employers, provided that these canteens are run by the employer and do not constitute separate economic units (In the latter case, their contributions to output etc. are made through the restaurants industry). Separate estimate is not made for such a secondary output, as no direct sources are available. However, as such costs (intermediate consumption for representation, meals etc.) are not VAT-deductible, an effort has been made to identify and calculate these costs for the theoretical VAT calculations in the national accounts. Employers' costs of canteens are thus included in intermediate consumption in terms of an aggregated item of unspecified products (*inter alia*, purchased food for own canteens). Although secondary output is not explicitly estimated, it is suggested that it is embodied in some other outputs and thus covered in the total output of the respective units. Thus, this aspect of exhaustiveness is likely taken care of, while we might ideally have opted for a reallocation of outputs to have full identification on the supply side as well.

7.3.6 The final use vs. intermediate consumption problem addresses the income in kind item of this heading. Separate estimate based on the income approach has not been possible as no direct sources are available. Nonetheless, it is reasonable to state that exhaustiveness of the GDP estimate has been ensured. First, specific information on sales in the government (fees of various kinds) has been reviewed and has to a substantive extent been allocated to this kind of expenditures and thus incurred for in terms of household consumption expenditure. In Norway, main government services in areas like education, health and social work are still provided free to a very large extent; thus, expenditures for meals, sales of goods in kiosks etc. have a relatively large share of incidental sales from government. Apart from household consumption expenditure recorded directly on this basis, household consumption expenditure - as described in the Inventory - has been given a thorough review to ensure that a reasonable estimate for the total is arrived at on the basis of information available. This total review takes into account the various sources and uses the method of commodity flows and the expenditure approach in combination. Based on this review, no further adjustment seems necessary to reallocate from intermediate consumption to household consumption expenditure as a separate adjustment for employers' contributions to the running costs of canteens.

7.3.7 Meal vouchers provided by employers to employees also pertain to goods and services bought by the employer to provide them free or at reduced prices as income in kind. While this is believed to be a minor item in Norway and is represented by two items in the *A-melding* with small

amounts, i.e., administrative board and board when working overtime. Pay to armed forces (conscripts) is treated as wages in cash, not wages in kind.

7.3.8 The item **Food and accommodation provided free** of charge or at reduced prices to employees in hotels, catering establishments and agriculture is next Community heading. In a somewhat broader scope than this, the income approach is used to estimate income in kind as part of compensation of employees. Relevant items from the *A-melding* are shown in the following table.

Food and accommodation for free

<i>Title</i>	<i>Percentage taxable</i>	<i>Category</i>
Daily allowances, incl. accommodation - for inland travel - central government rates	0	II
Daily allowances, incl. accommodation - for travel abroad - central government rates	0	II
Daily allowances, excl. accommodation - for inland travel and travel abroad - central government rates	0	II
Daily allowances, incl. accommodation - for inland travel - other rates	0	II
Daily allowances, excl. accommodation - for inland travel and travel abroad - other rates	0	II
Daily allowances - lodgings/barracks	0	II
Daily allowances, incl. accommodation - for inland travel on special duty	0	II
Minor items in addition: Daily allowances to foreign workers in Norway; daily allowances, incl. accommodation for travel abroad, other rates; and for long-lasting stays; daily allowances for travel abroad to air transport personnel, incl. accommodation; and excl. accommodation; accommodation allowance in lodgings/barracks; daily allowances incl. accommodation for travel abroad to long distance truck drivers; daily allowances for students and their families in certain areas.		

7.3.9 The item **Rent-free dwellings** and dwellings let to employees at **below-market rents** also pertain to secondary output of employers and self-employed. In the NNA, renting services are provided by the various participating industries, typically as secondary production of renting services of non-residential property. No such part is recorded for residential purposes. Only two minor items, free housing for foreigners in business, and housing or accommodation allowances to foreign workers in Norway, are identified in the *A-melding*. Military dwellings probably are underestimated in this context.

7.3.10 The value of the interest foregone by employers when they provide loans to employees at **reduced, or even zero, rates of interest** pertains to financial assets bought, issued or granted by the producer. When loans are provided by a bank to its employees, the interest foregone should be included in calculating output in the bank and in compensation of employees. When provided by a producer other than a bank, it should also be included in the compensation of employees. The *A-melding* source includes one item on advantage to employees from cheap loans from their employers. It should also be recalled that Norway has a system of State banks that provide subsidized loans, treating the grants as subsidies to those producers benefiting from them, or as social benefits to households as consumers.

7.3.11 Income in kind in terms of travel tickets supplied free of charge or at reduced prices to employees is regarded as taxable income and is due to be reported to the *A-melding* and is thus part of estimated compensation of employees.

7.3.12 Item Electricity and coal **supplied free of charge** or at reduced prices to employees is not important in Norway, i.e. there are few arrangements whereby an electricity or coal company supply electricity or coal free of charge or at reduced prices to their employees or others. When such arrangements occur, they have been reported to the *A-melding* as wages and salaries in kind and thus part of compensation of employees.

7.3.13 Next item is **free mobile phone and use of mobile phone (subscription)**. The employees' estimated benefits (according to the tax authorities' rules) are due to be reported to the *A-melding* and hence part of income in kind in the NA.

7.3.14 The item **Traders' consumption** from their **own traded goods and services** and other items of income in kind are the item of miscellaneous income in kind which consists of a fairly long list of items reported to the *A-melding*.

7.3.15 **Employers' payments on accident and life insurance premiums** for the benefit of the employees above standard mandatory insurance contracts are covered. They include premiums for non-life insurance, group life insurance, individual and collective life annuity and individual pension funds or pension insurance. Also, employers' payment of premium for "loss of licence" insurances is covered here.

7.3.16 It should be recalled that the list of **examples from ESA 2010** also contains items that have not been explicitly dealt with here. Also, some items of income in kind in the *A-melding* are unspecified and termed miscellaneous. One such item is **car parking**. No explicit information is available for this item, part of the reason being that car parking provided free for employees and paid for by employers is not widespread (mostly confined to the Oslo metropolitan area).

7.3.17 In practice, **tipping** is not widespread in Norway. At least in the past, only in rather exceptional circumstances were tips given, and they have tended to be small after all. Unregistered tips have traditionally been considered as being of not insignificant size for a few industries, like restaurants and taxi-transport. For the time being, and for several years now, cash is seldom used as means for payments in Norway. Tips are taxable income (the relevant statements and laws are clear) and are due to be reported to the *A-melding*. Nowadays almost all payments for meal and drinks at restaurants and bars are done electronically, hence cash is seldom used. The device used for the electronic payment ensures total payments at restaurants and bars are correctly split between tips and regular amount for the food and drinks ordered. Also, taxi-trips are normally paid by card electronically, resulting in those tips being registered. The employer, normally the owner of the car, is responsible for reporting the tips registered to the *A-melding*. For compensation of employees no adjustments are made for unreported tips reflecting the belief that tips are in general reported to the *A-melding*.

7.4 Other considerations

7.4.1 In Norway, information from **fiscal audits is not used** in the national accounts to increase the exhaustiveness. In the main revisions in 1995 and 2002, Statistics Norway considered a more thorough effort to explore the possibilities in this field. The results from fiscal audits, however, have been considered difficult to use, mainly due to non-randomness concerning units being sampled.

Other considerations

7.4.2 During the 1990s, **GNP Committee Task Forces** have studied exhaustiveness issues in **construction**, in **distributive trade and Horeca** (Hotels, Restaurants and Catering), in using in national accounts **household budget surveys**, and issues related to **Intrastat**. The latter is referred to in preceding paragraph, while some summary references are followed below for the other areas. In particular, the recommendations made in the respective Task Forces are looked into from the point of Norwegian experience.

7.4.3 Recommendations of the GNP Committee Task Force on **Construction** include in total 23 items, of which 2 on integration, balancing and cross-checks, 12 on production statistics, and 9 on price and quantity. The two **recommendations on integration, balancing and cross-checks** are generally met in the NNA where annual SUT frame and detailed product balances are among the main features. **Recommendations on production statistics** are also generally met with the use of the SBS-based statistics, the Business Register, variables covered, grossing methodology (reliable estimates for both output and intermediate consumption), comparisons including LFS data, subcontracting businesses covered, supply and demand of building materials in the SUT, data on repairs and improvements to dwellings from households, appropriate strata for sample surveys, information about self-build of new dwellings, exports separately identified and with consistent treatment vis-à-vis the BoP. Fiscal audits data are however not possible to use in the NNA. **Recommendations on price and quantity** are not addressed here (outside GNP/GNI Inventory dealing with estimates in current prices, although in a more general sense it should be added that assessment of current-price estimates are being made again sometimes after deflation and separate judgments of volume estimates from alternative volume indices have been made). Activities carried out by foreign workers have become increasingly important in the construction industry in most recent years. These involve a number of important exhaustiveness issues that have been analyzed in a separate project financed by Eurostat. Results from this project were included in the NNA in the 2006 main revision, and for the year 2005 compensation of employees to non-residents was raised more than 100 percent to NOK 14 billion. See detailed documentation in:

http://www.ssb.no/english/subjects/09/90/doc_200702_en/doc_200702_en.pdf

7.4.4 Recommendations of the GNP Committee Task Force on **Distributive trade and Horeca** include 15 general items affecting both the distributive trades and Horeca, 8 items specifically for the distributive trades and 4 items specifically for Horeca. General recommendations on **distributive trades and Horeca** are broadly met with respect to availability of an updated Business Register, direct inquiries to enterprises, SBS-based statistics, i.e. using accounting statistics data, tips, independent estimates made on both supply and demand side, coherence with employment data through labor accounts, checks for internal consistency and relationships with corresponding statistics, and being able to give the significance of small firms for variables like turnover and employment (Business Register data). What is more questionable in the NNA compilation is quality of adjustments for missing units, underreporting of income, hidden labor, VAT fraud, to some extent also income in kind, and again, failing to make use of fiscal audits. **Recommendations specifically for the distributive trades** are to a large degree met in the NNA compilation, such as using trade margin survey data broken down by products as benchmark (not on annual basis). Some are difficult, however: to utilize detailed information concerning the distribution channels of goods, and to create a good validation method for the retail trade to compare retail trade turnover data and tradable consumption of households. **Recommendations specifically for Horeca** are basically met in the NNA.

7.4.5 Recommendations of the GNP Committee Task Force on use of **Household Budget Surveys** in the NA are grouped in 9 items. Each of them is listed below with Norwegian experience attached.

Recommendations of the TF on the use of Household Budget Surveys in NA	Norwegian experience
I. Ensure all appropriate adjustments for difference in population, concepts and definition are undertaken to convert raw HBS data into the corresponding NA estimates of household final consumption	See section 5.7; coverage and treatment of persons living in institutions is unsatisfactory dealt with in NNA, while adjustments are made in main revisions to justify additions
II. Identify where HBS results are consistently of most value. This experience will vary between countries, but food and housing are generally regarded as reliable	See section 5.7 by COICOP where HBS as source for HFCE is discussed at individual item level
III. Use HBS time series to compare or validate other sources like retail sales, commodity/supply side estimates, administrative data, business statistics	Comparative studies of HBS and HFCE estimates of NA are made from time to time, especially when main revisions are undertaken, same applies to other studies and comparisons of this nature
IV. Guard against (mainly downward) biases in HBS data, and adopt appropriate solutions (points are given)	Long experience in Statistics Norway is taken into account
V. Improve the reliability of HBS data by appropriate solutions (points are given)	Reference is made here to special projects with Research Department in Statistics Norway on how best to use HBS data for NA compilation, on refining methodology etc.
VI. Resources permitting, increase both the frequency and timeliness of HBS results; continuous surveys offer the greatest opportunities for exploiting HBS data, and for improving the quality of HBS results	Annual HBS was undertaken in Norway in the period 1974 - 2009 and timely enough for final NA estimates. A new and expanded survey was conducted for 2012, and next is planned for 2022
VII. Institute regular and systematic checks on the resulting time series and feedback the results to HBS statisticians and interviewers	Close cooperation exists between the producers (statisticians and interviewers) and main users of HBS in Statistics Norway (NA, Research Department)
VIII. Have faster and better organizational links between HBS and NA staff to maximize the productiveness of the statistical dialogue between them; this helps to improve the quality of HBS data	See above
IX. Use information in the HBS for making imputations (for rent, in particular) and for estimates of benefits in kind, of own production, repair and maintenance, and certain capital expenditures	HBS data are discussed for use (direct use or indirectly as control or in combination with other sources) on item-by-item basis

7.4.6 Finally, attention can be drawn to the analysis of the net **transition items** going from **GDP to GNI**. The two main items, net compensations of employees and net property income, have been subject to assessments in separate projects. For compensation of employees, a joint Eurostat and Statistics Norway project resulted in revised figures for especially compensation of employees to abroad (debit), taking into account the rapid growth in employment of non-residents after the

expansion of the EEA in 2004. The compensation of employees paid to non-residents are about 10 times higher than compensation of employees received from foreign employers, which all fit well with data on resident works abroad versus non-resident works in Norway.

7.4.7 Also, some analysis has been carried out on property income to and from the rest of the world, as a kind of plausibility test on these figures. Norway turned from net borrower to net lender towards the rest of the world in the mid 1990's and the fact that Norway for some years after that (until 2002) was in a position of net lending and still continued to receive a negative net property income from the rest of the world, initiated this kind of analysis. The results show that the rate of return on Norway's investments abroad are lower than foreigner's rate of return on their investments in Norway, of which much can be explained by the foreigner's attention to the oil industry. This kind of plausibility test is carried out frequently within the Norwegian national accounts and balance of payments.

CHAPTER 8 THE TRANSITION FROM GDP TO GNI

8.0 Introduction

8.0.1 The following table presents the transition from GDP to GNI for Norway for the year 2019.

GDP and GNI. NOK billion and per cent. 2019

<i>Item</i>	<i>NOK billion</i>	<i>Per cent of GDP</i>
(1) GDP	3563.5	100.0
Compensation of employees, credit	5.4	0.2
Property income, credit	378.0	10.6
Interest, credit	149.5	4.2
Dividends paid, credit	245.8	6.9
Other, credit	- 17.3	-0.5
Compensation of employees, debit	40.7	1.1
Property income, debit	233.4	6.5
Interest, debit	105.1	2.9
Dividends paid, debit	117.1	3.3
Other, debit	11.2	0.3
- Correction FISIM	- 0.5	-0.0
(2) Primary income, net	109.8	3.1
(3) = (1) + (2) = GNI	3673.3	103.1

8.0.2 In Norway, Balance of Payments has ever since the 1950s been fully integrated with the national accounts under the responsibility of Statistics Norway. The same procedures are used for estimating data jointly to the BoP and the rest of the world account (RoW) of the NA. Until 2004 one of the main sources used was the international transactions statistics (ITRS) of Norges bank (the central bank). The statistics was however stopped in 2005 and the statistics department of the central bank was moved to Statistics Norway in 2007. So, today the Norwegian BoP and RoW are solely based on data collected by Statistics Norway.

8.0.3 In general, the concepts of the IMF's Balance of Payments manual (BPM6) are employed in estimating figures for the Norwegian BoP and the NNA, and thus they are consistent with the ESA 2010 concepts.

8.1 Compensation of employees

8.1.1 In the NNA, compensation of employees in the context of Balance of Payments is distinguished in **two main categories**:

Compensation of employees to abroad

Compensation of employees from abroad

8.1.2 **Compensation of employees to abroad** is defined according to ESA 2010 and BPM6 (BoP expenditure item: compensation of employees). In Norway, this item historically mainly consisted of compensation to non-resident seamen and compensation to non-resident pilots (and other air transport personnel). These are fields of Norwegian production more typically than others being performed in international territories and employing non-resident personnel, and thus relevant to be recorded here. This item was re-estimated in a Eurostat supported grants project in 2006¹⁶, taking into account the growth in non-resident workers with short-term stay in Norway in the wake of the EU-expansion in 2004. Information is taken from two separate sets of sources, (i) tax return statistics in combination with information from the Central Register of Wages and Salaries, and (ii) register-based employment statistics combined with data from wage statistics.

8.1.3 **Compensation of employees from abroad** (BoP income item: compensation of employees) relates to Norwegians working abroad. This item is estimated as a group in its entirety, based on information from the tax authorities and from the register of wages and salaries (RWS). It should be noted that this item is based on rather scarce observable information and a set of assumptions, making the results more uncertain than for the outflow of compensation of employees. Still, the estimates for compensation of employees from abroad have now basis in some current observations rather than - as with the old figures - being extrapolated from a rather distant benchmark period.

8.1.4 In Norway, compensation of employees to abroad has a higher value than compensation of employees from abroad. Both amounts are relatively small, **1.1 and 0.2 per cent of GDP** respectively in 2019. Before the 2006 main revision, the first item in particular was much underestimated and thus **revised upwards** accordingly beginning from the 2006 revision. Administrative information and specific surveys, as well as the fact of the recent expansions of the EEA, indicate that these flows needed to be assessed in a more detailed manner than before.

¹⁶ “Cross border flows of compensation of employees in Norwegian national accounts and balance of payments” - Agreement number - 40100.2005.001-2005.360.

Compensation of employees. NOK billion and percentage of GDP. 2019

<i>Item</i>	<i>NOK billion</i>	<i>Percentage of GDP</i>
Compensation of employees to abroad	40.7	1.1
Compensation of employees from abroad	5.4	0.2
<i>Memo:</i>		
Total compensation of employees (domestic)	1 733.2	48.6

8.1.5 Compensation of employees to abroad and compensation of employees from abroad are **two items of minor importance** if compared either to total compensation of employees or to other items involved in the transitions from GDP to GNI. Thus, compensation of employees to abroad is just 2.3 per cent of total compensation of employees in Norway and compensation of employees from abroad at 0.3 per cent of total compensation of employees (in 2019). This implies that total compensation of employees on a national basis amounts to 98.1 per cent of total compensation of employees on a domestic basis.

8.1.6 Main sources used are:

- Tax (authorities' data) return statistics
- Register-based employment statistics
- Maritime transport statistics
- Accounting data from SAS

8.1.7 The sources used suggest that the cross-border flows of compensation of employees are mostly recorded on **an accrual basis**. Until 2004, the ITRS compiled by the Norges Bank (the central bank) was the most important data source. Direct reporting from the relevant economic units is the dominant method now to replace the ITRS as source for the BoP. However, for the items of compensation of employees to and from abroad, it was decided that indirect information in administrative registers and other existing sources should be used¹⁷. Two sources have been used and the following describes the methods used for **the year 2004**, chosen as a **base year** in the estimations. The source of **tax return statistics (TRS)** has provided a new basis for compensation of employees to abroad, but the coverage is just 70 - 80 percent since reliable data in air transport and ocean transport are not expected from this source. For these two industries of transportation, therefore, adjustments have to be made by using separate sources. It should be added that the tax authorities' data imply income tax of approximately 33 per cent of compensation of employees to abroad.

8.1.8 The TRS is a register of personal taxpayers kept by the Directorate of Taxes and comprises all individuals, both residents and non-residents, obliged to leave a tax return with Norwegian taxation authorities. It appears that the non-resident concept used is not defined in a coherent manner among the local tax authorities, and it may take four years before an individual who is initially labeled non-resident, is given a resident code and reclassified as resident. For this reason, the persons categorized as non-residents in the Tax Return register are linked to the Central Population register to identify those individuals that are defined as residents according to the population statistics, i.e., those living more than 6 months in Norway. This population is further limited to those with a work contract with resident employers through a link with the Central register of Wages and Salaries. This first method by combining the TRS and the Central Register of Wages and Salaries gives an estimate of compensation of employees to abroad of NOK 9.1 billion in 2004.

¹⁷ The estimation of compensation of employees described in the following paragraphs is documented in more detail in an Eurostat grants project - Agreement number - 40100.2005.001-2005.360.

8.1.9 The other source is the register-based **Labour Force statistics**. According to data from this source, 30 000 non-residents were working in Norway on **short term basis** and employed by resident employers in 2004. This information is used to make estimations of compensation of non-resident employees complementary to those based on the first set of sources. To generate an estimate on the nominal value of compensation of employees corresponding to the 30 000 non-resident persons working in Norway, a further set of assumptions must be made.

8.1.10 A separate study indicates that about 20 per cent of the non-residents were **working part time**. We do not know exactly their average part time share, but the study indicates an average part time percentage of 35 among those who works part-time. Roughly speaking, this corresponds to each employee on the average supplies 0.87¹⁸ man-years.

$$(1) 30\ 000 \text{ persons} * 0.87 \text{ man-years/person} = 26\ 100 \text{ man-years.}$$

Statistics Norway's Wage Statistics give some information on the level of wage rates for non-residents compared to resident employees. According to this, non-residents receive wages and salaries that are about 10 per cent lower than the average wages and salaries for all Norwegian employees in 2004, which were NOK 347 000.

$$(2) \text{NOK } 347\ 000 \text{ per man-year} * 0.90 = \text{NOK } 312\ 300 \text{ per man-year.}$$

Total wages and salaries received by non-residents covered by the Labour Force statistics thus are:

$$(3) 26\ 100 \text{ man-years} * \text{NOK } 312\ 300/\text{man-year} = \text{NOK } 8\ 151 \text{ million.}$$

8.1.11 Comparing this to the result when the **Tax Return data** (NOK 9.1 billion) are used, we find a difference of NOK 1 billion. This made us conclude that the two sets of estimations both confirmed the need of a clear upward revision of the figures compared to those that were currently in use. Secondly, acknowledging the uncertainty of both sets of estimations, we also concluded that the two methods indicate roughly the same level. Finally, we chose to use the results from the estimations based on the Labour Force statistics, i.e., NOK 8.1 billion in 2004, as this figure ensures consistency with the Labour Accounts data of the NA.

8.1.12 Compensation to **non-resident seamen** was until the late 1990s the main sub-item of compensation of employees to abroad. It was earlier estimated in fact from all three sources: **maritime transport statistics** compiled by Statistics Norway, **the ITRS**, and **tax authorities' data**. Taking the first as the basic source, three adjustments were made to it. From the maritime transport statistics of Statistics Norway and information from Norwegian Shipowners' Association, estimates were obtained by eliminating previous adjustments, particularly from the ITRS. The non-resident seamen compensation was estimated at NOK 2.4 billion in 2004, of which 2.3 billion were wages and salaries and 0.1 billion employers' social contributions.

8.1.13 The item consists of two elements:

-	Foreign seamen on Norwegian ships
-	Foreign crews on chartered ships

¹⁸ 80% working full-time (100%) = 30 000 persons x 0.80 = 24 000 man-years
+ 20% working part-time (35%) = 30 000 persons x 0.20 x 0.35 man-years/person = 2 100 man-years
= 26 100 man-years. 26 100/30 000 = 0.87.

Foreign seamen on Norwegian ships were redefined from residents to non-residents as part of the 1995 main revision of National Accounts and Balance of Payments. This entails that their wages are no longer recorded as a combination of direct purchases abroad by resident households and transfers to abroad, but entirely as compensation of non-resident workers (seamen). Compensation paid to foreign crews on chartered ships (foreign-registered vessels participating in Norwegian production) is now recorded as compensation of non-resident workers (seamen), whereas previously included as part of the shipping sector's operating expenditure abroad. The current treatment addresses ESA 2010, paras.1.61 and 2.10 - foreign seamen and crew on these ships having their center of economic interest in their home country. It should be added that Norwegian NA and BOP treatment respect the resident criteria referred to above. That applies to the treatment of students abroad as well.

8.1.14 Compensation to **non-resident air pilots** is estimated in connection with production of air transportation services (see output section), and earlier also related payments recorded in the foreign exchange statistics (ITRS). Presumably, tax authorities' data exclude this completely. Quarterly accounting data received from the Scandinavian airline company SAS are used instead to calculate compensation to foreign pilots. This has been in accordance with the special treatment SAS is given in the national accounts.

8.1.15 Prior to the 2006 main revision, no estimation was made for compensation of employees to **other groups of non-residents**. At present, however, separate estimations based on employment statistics and tax authorities' data provide figures for non-resident workers on short-term stay in Norway, see 8.1.7 – 8.1.11 above. Expenses on wages and salaries to personnel at Norwegian embassies obtained from central government accounts have been used to include their local non-residents working as staff in the estimations (small amount). Payments to local employees are assumed to be 25 per cent of these expenses.

8.1.16 Wages and salaries of **frontier and seasonal workers** resident and working in two different countries have not been estimated directly. In this respect, there are no regular exchanges of data sources with neighboring countries. These items were however included by the ITRS recordings among services. In the 1995 main revision, information from tax authorities etc. seemed to indicate that the former estimate was much too low and was in part related to the oil and gas extraction industry. The final estimate for **compensation of employees from abroad** has later been revised upwards in several stages, most recent as part of the 2006-main revision, see 8.1.7 – 8.1.11 above.

8.1.17 The only source presently of some potential use for estimating **compensation of employees from abroad** is the **Tax return register**. Residents working abroad and having work contract with non-resident employers are obliged to report their income in terms of wages and salaries to the Norwegian Tax authorities, even when not taxed in Norway. This information is not specified on the tax return form submitted by the employees to the tax authorities. What is available, though, is the taxpayer's claim of tax deduction based on taxes paid to other countries. By assuming tax ratio as in Norway and also the wages and salaries ratio to total income as earned in Norway, an estimation of wages and salaries earned abroad can be made. It turned out that the new estimate for 2004 (NOK 2.9 billion) was almost the same as the prevailing one (NOK 2.6 billion). Compensation of employees from extra-territorial organizations is not estimated separately but is implicitly included through the use of data from the Tax return register.

8.1.18 Contribution paid by resident employers to **foreign Social Security** schemes or similar foreign private insurance, or pension funds should be included as part of compensation of employees. **Employers' social contributions** are included in the figures of compensation of employees in most cases and excluded in other cases where figures are relatively small. In the case of foreign seamen, the social contributions are estimated directly reflecting the social security funds or arrangements in that case (4 per cent of total compensation). For the SAS air transportation case, social contributions are included in total compensation of employees. Elsewhere, to be able to estimate not only wages and

salaries but also employers' social contributions and thus compensation of employees in total, an assumption on the share of the premiums (contributions) to the total amount of compensation is made. This share is assumed to be 10 per cent, while observed to be 22 per cent for the Norwegian economy in total in this case. No effort was made to **split between actual and imputed social contributions by employers** in the BoP and the NNA.

8.2 Taxes on production and imports

8.2.1 Taxes on production and imports in the context of Balance of Payments are virtually **not applicable** in Norway. In 2019, it has not been possible to locate any taxes on production and imports to and from abroad.

8.3 Subsidies

8.3.1 Subsidies in the context of Balance of Payments are virtually **not applicable** in Norway. Or rather, it may be that a small part of subsidies included under current transfers could refer to subsidies on production. In 2019, it has not been possible to locate any subsidies to and from abroad.

8.4 Interest

8.4.1 **Investment income** (Property income D.4 in ESA 2010) is defined as the income accruing to an investor from the ownership of financial assets and natural resources. Included under this heading are interest, dividends, remittance of branch profits and reinvested earnings. In Norway, dividends is the largest item contributing to property or investment income on both the credit side as well as the debit side. Some general information for investment income: **Holding capital gains and losses**, both realized and unrealized, are **not classified as income** on investment. Realized holding gains and losses arising from transactions are included in the financial account, while the latter is recorded in a separate revaluation account.

8.4.2 In Norway, **interest to abroad** (interest expenditure) had until the mid-1990s a higher value than interest from abroad (interest income). In 2019 however interest from abroad is more than NOK 44 billion higher than interest to abroad, with the two accounting for **4.2 and 2.9 per cent of GDP** respectively. A possible reason is that Norway has over years accumulated a huge oil fund overseas, i.e., the Government Pension Fund Global (*Statens Pensjonsfond Utland* in Norwegian). Interest expenditure to abroad and interest income from abroad both are of considerable (but declining) importance compared with total investment expenditure to abroad (45 per cent in 2019) and total investment income from abroad (40 per cent), respectively, as compared with 79 and 92 per cent in the year 1990.

Interest to and from the rest of the world. NOK billion and percentage of GDP. 2019

<i>Item</i>	<i>NOK billion</i>	<i>Percentage of GDP</i>
Interest expenditure to abroad	105.1	2.9
Interest income from abroad	149.5	4.2
<i>Memo:</i>		
Total investment expenditure to abroad	233.5	6.6
Total investment income from abroad	378.1	10.6

8.4.3 Main source used to record data on interest income and interest expenditure in the Norwegian Balance of Payments was earlier the ITRS from Norges Bank, but from 2005 succeeded by the new data collection system for residents engaged in economic relations with non-residents (UT-statistics for short):

- Foreign exchange statistics (ITRS) – until 2004
- UT-statistics – from 2005 (direct reporting from the various sectors: non-financial enterprises, financial enterprises, government etc.)

8.4.4 In 2005, when the ITRS was abolished as source in the BoP, the UT statistics were introduced as the general source like for most other parts of the BoP, including exports and imports of services as referred to in chapter 5. In the case of interests, the compilation uses a sector approach involving an interest matrix to be established. From the direct quarterly and annual surveys used in the UT statistics, data on interest between residents and non-residents are obtained as far as non-financial corporations and own account works in households are concerned. Other sources used are central and local government accounts for general government and accounting data from credit market statistics for financial corporations sector.

8.4.5 In the new system collecting data from the accounts, it is possible to have a more transparent information on the interest flows. As regards the question of grants for interest relief, earlier it was not possible to say for sure whether they were included or not, payments being mixed in certain ways. Most likely, however, grants are now included in the cross-border interest flows.

8.4.6 BPM6 recommends that interest should be recorded on an accrual basis. As the sources of the UT-statistics to a very large extent are the accounts of the reporting units, it is assumed that the income flows are recorded on an accrual basis and not payments basis.

8.4.7 Non-distributed interests and dividends in **resident** mutual funds are entered the current account. This treatment was introduced with the introduction of the revised 2008 SNA and 2010 ESA from 2014 and relates to non-residents shares in Norwegian mutual funds. The corresponding flows related to residents' shares in non-resident mutual funds have not been introduced, however.

8.5 Distributed income of corporations

8.5.1 Investment income (Property income D.4 in ESA 2010) is defined as the income accruing to an investor from the ownership of financial assets and natural resources. Besides interest (dealt with above), this section and the next deal with the other components of investment income, and likewise investment expenditure.

8.5.2 The item of **dividends** tends to fluctuate in Norway. On the debit side this to large extent is related to dividends to abroad in connection with fluctuating prices in the oil extraction industry. But dividends have increased its importance over time. For example, on the debit side while dividends represented only 12 per cent of total investment expenditure in 1990, this relative was 50 per cent in 2019. Dividends **to abroad** were historically much higher than dividends **from abroad**, in 2000 at the level of 0.7 and 0.2 per cent of GDP, but this relative has changed and in 2019 the debit component are markedly lower than the credit component. This change reflects the shift in Norway's net international investment position from a **net borrower** until the mid-1990s **to a net lender** now.

Dividends to and from the rest of the world. NOK billion and percentage of GDP. 2019

	<i>NOK billion</i>	<i>Percentage of GDP</i>
Dividends to abroad	117.1	3.3
Dividends from abroad	245.8	6.9
<i>Memo:</i>		
Total investment expenditure to abroad	233.5	6.6
Total investment income from abroad	378.1	10.6

8.5.3 Main source used to record data on dividends to and from abroad in the Norwegian Balance of Payments is:

- Foreign exchange statistics (ITRS) – until 2004
- UT-statistics – from 2005 (direct reporting from the various sectors: non-financial enterprises, financial enterprises, government etc.)

8.5.4 Dividends are reported through the UT statistics from the reporting units of the various sectors (non-financial enterprises, financial enterprises etc.) and are based on the accounts of the reporting units. It is therefore reasonable to interpret the flows of dividends being recorded on an **accrual basis** and not payment basis (while reinvested earnings are recorded in the periods when they are earned, see next item). Dividends (and reinvested earnings) are recorded with the code for the resident sector involved, in order to include the transactions in the Institutional Sector Accounts of the National Accounts. Dividends are recorded before the deduction of any taxes levied on it. Holding gains are excluded from estimates of dividends (see 8.4.1 above).

8.5.5 The income of **Undertakings for Collective Investment (UCIs)** is recorded as property and entrepreneurial income, both when income is distributed and when it is not. In the latter case, regarding Norwegian mutual funds, it is first treated as an income paid out by the UCI to its shareholders, and then the latter reinvest them immediately in the UCI, in accordance with ESA 2010.

8.5.6 There is the question of treatment of withdrawals from the income of quasi-corporations, and particularly the net operating surplus received by residents as owners of land or buildings abroad. Until the new UT-statistics were introduced, no estimate was made, while a first attempt has been made on basis of this new source.

8.5.7 However, the growth in ownership of secondary or **holiday homes abroad** has made it necessary to estimate stock values as well as income and consumption flows in the BoP and the Rest of the World account of the NA. The following table summarizes estimation results in the Norwegian NA and BoP for 2002, which were the base year in the estimations carried out.

Holiday homes abroad. 2002. NOK million.

Item	Norwegian owned dwellings abroad	Dwellings in Norway owned by non-residents
Stock value	36 936	20 629
Annual investment	10 985	988
Property income	388	217
Consumption of dwelling services	483	270

8.5.8 The number of foreign properties owned by Norwegian resident households abroad is based upon yearly data collected by Statistics Norway and an interview survey conducted in the second half of 2002 (Sentio, 2002). The interview survey found that 2 per cent of Norwegian households had holiday homes abroad. The number of Norwegian households that own a second home abroad in 2002 is used as a benchmark. Then more recent years is projected by extrapolating the benchmark estimate with a volume index. The volume index is deduced from data recorded in the Tax Return Statistics (Statistics Norway), in which the benchmark estimate from 2002 is extrapolated using the annual growth in persons reporting the own property abroad.

8.5.9 The economic flows related to the ownership of holiday homes abroad are estimated using ratios observed in the NNA and some crude assumptions. For example, it is assumed that the income received from abroad generated through the ownership abroad is in the same proportion to the stock value abroad as the ratio between operating surplus generated in the Norwegian dwelling industry and the stock value of dwellings in Norway. As seen from the table, the ratio between the stock value of dwellings owned by Norwegians abroad and non-residents ownership of dwellings in Norway, including their respective economic flows, is almost 2:1 in 2002. This result seems plausible taking into account both Norway's position in income per capita ranking for different countries and the size of the Norwegian BoP item Travel debit relative to Travel credit. However, it must be admitted that more relevant and accurate information is in demand to raise the quality of these results. In particular, improvements could be made if the NA-data from partner countries on dwelling activities is obtained and made use of in the calculations.

8.6 Reinvested earnings on foreign direct investment

8.6.1 Investment income (Property income D.4 in ESA 2010) is defined as the income accruing to an investor from the ownership of financial assets and natural resources. **Reinvested earnings** are an important component in investment income and investment expenditure. Hence, it is described in a separate section of the Inventory.

8.6.2 **Reinvested earnings** are the difference between the total operating surplus in direct investment enterprises (income for the investor) and distributed dividends. Previously - before the 1995 main revision - actual dividend payments only were included in the accounts. Reinvested earnings may be positive or negative which was the case in Norway in 2019 on the credit side (may be interpreted as disinvestments). In 2019, reinvested earnings corresponded to **0.2 and -0.5 per cent of GDP** respectively to abroad and from abroad.

Reinvested earnings. NOK billion and percentage of GDP. 2019.

	<i>NOK billion</i>	<i>Percentage of GDP</i>
Reinvested earnings to abroad	7.9	0.2
Reinvested earnings from abroad	-17.3	-0.5
<i>Memo:</i>		
Total investment expenditure to abroad	233.5	6.6
Total investment income from abroad	378.1	10.6

8.6.3 Main sources used are:

- Special surveys on direct investment in Norway by Statistics Norway
- UT-statistics – reports from non-financial enterprises to Statistics Norway

8.6.4 Reinvested earnings are estimated based on information collected as part of the surveys on **direct investment**. From 2005 direct investment data are based on the **new survey reporting system** of Statistics Norway for balance of payments purposes (**UT**). For direct investment abroad from 2007, a separate survey by Statistics Norway is another important data source. In addition, information from annual accounts submitted to the Register of Company Accounts is used as a source to detect and collect data on Norwegian direct investment abroad. The statistics on foreign direct investment in Norway is based on the new BoP-reporting for non-financial enterprises (UT), which has 2004 as the first reference year, and annual accounts submitted to the Register of Company Accounts. Information from newspapers and the Internet is used as a supplement to detect and collect data on new investment abroad and in Norway.

8.6.5 For **inward FDI** the source for profits is register data for total profits which is combined with the share of foreign ownership from the BoP data survey of non-financial enterprises (the UT-statistics). The latter is also the source for distributed dividends. For **outward FDI** the source for profits is the FDI survey on equity capital and profits, while the BoP survey of non-financial enterprises is the source for distributed dividends.

8.6.6 There is a clear distinction between direct investment income and portfolio income in the BoP survey of non-financial enterprises, but the distinction is not yet fully utilized in the published tables from the Norwegian BoP. The two sources for outward FDI are co-ordinated regarding the resident investors, but not regarding the non-resident investment companies. Distributed dividends are collected also in the outward FDI equity capital and profit survey, but the numbers have shown not to be reliable (too small numbers).

8.6.7 The sources have become less adequate for updating the survey register after the introduction of the new BoP data collection system. Consequently, a project has been launched to improve the update sources including a co-operation with the **EuroGroup Register**. Both holding companies, branches (unincorporated enterprises wholly owned by foreign companies) and special purpose entities are covered by the register.

8.6.8 Re-invested earnings on inwards direct investments are based on accounting information from the NO taxation reports, where gains, losses, extraordinary events etc. are given as separate items and can thus be excluded from the estimations. The question regarding exclusion of holding gains on outward direct investments has so now been underlined in our reporting instructions for profit reporting.

8.6.9 The cross-border flows of re-invested earnings for the periods covered by registered data and accounting based report data (t-2) are measured when they are earned, but for the subsequent periods, i.e., before the annual register data and survey data are available, the reinvested earnings are estimated

based on the most recent known annual data (and more recent reported data for distributed profits). In very volatile periods (e.g., the financial crisis 2008/2009), less emphasis is made on the previous period.

8.6.10 Two important changes were made as from 2007 with backward revisions. First, indirect owned equity capital was excluded thus bringing this part in line with the manual and with inward FDI. Second, other capital and income are taken from the BoP survey of non-financial enterprises (and from other sources for the few financial enterprises involved in FDI) rather than from the special survey for FDI purposes which is then limited to equity capital and profits. In addition, the FDI is now based on a sample (cut-off) survey instead of the (in theory) full scale tax survey. But the tax survey became increasingly less complete with a random lack of reports which had to be replaced by other sources.

8.7 Property income attributed to insurance policy holders

8.7.1 Investment income includes also other income that cannot be classified according to the associated assets or liabilities. Normally, relatively small figures were reported as **other investment income** in the ITRS, included with the item of dividends when published. Values included here are not consistent with the values for premium supplements used in calculating imports and exports of insurance.

8.8 Rents on land and on sub-soil assets

8.8.1 Investment income includes also income in terms of rent from directly owned property and land abroad as reported in the sample survey of non-financial enterprises replacing the ITRS in 2005.

8.A Appendix to Chapter 8 The transition from GDP to GNI

8.A.1 In Norway the Balance of Payments data are integrated in the Institutional Sector Accounts (ISA). This contributes to improved quality, consistency and harmonization between the ISA/NA and the BoP systems and thereby the transition from GDP to GNI.

8.A.2 Thus, complementary descriptions to GNI are through **the rest-of-the-world sector** and the integration of Balance of Payments. Transition from GDP to GNI is approached through the global items in the Balance of Payments Accounts, and this is illustrated below in conceptual relationships. However, it should be clear that **GNI** also could be estimated through adding the **balances of gross primary incomes** in the ordinary institutional sectors.

Different approaches to GNI. NOK billion. 2019.

	<i>Main national approach</i>	<i>Sectoral approach</i>
Gross domestic product (GDP)	3 563.5	
+ Compensation of employees from abroad	5.4	
- Compensation of employees to abroad	40.7	
+ Property income from abroad	378.1	
- Property income to abroad	233.5	
- Correction FISIM	-0.5	
= Gross national income (GNI)	3 673.3	3 673.3
Non-financial corporations		632.3
Financial corporations		61.2
General government		942.9
Households		2 025.1
NPISHs		11.8

9.1 Classifications used for the production approach

Summary

9.1.1 Main classification schemes used in the NNA for the estimation of GDP according to the production approach are the **activity classification** based on **NACE Rev.2**, and the **product classification** based on the corresponding **CPA**. They replaced in the 2011 main revision the former activity classification based on NACE Rev.1, and the corresponding CPA.

9.1.2 In the NNA, there are at present (for reference year 2019) **131 activities specified** in terms of NACE specifications, while altogether **154 activities when cross-classified by categories of production** (types of producers). Norway is keeping - and has always kept - a detailed profile for the activity classification in the national accounts. A shift from goods to more services in the NNA has been accompanied by a shift from goods-producing activities to more service-producing activities being specified. There is now a roughly 50 - 50 distribution between goods-producing and services-producing activities. Statistics Norway's **self-evaluation** is that the present activity classification applied in the NNA has **enough details**, with a well-adjusted profile between types of activities and a user-friendly differentiation into **categories of production**. All the three features contribute and lead to reliable ESA 2010-based NA estimates.

9.1.3 The **breakdown by categories of production** - market, own final use and other non-market - is handled through the coding system (prefixes), by introducing separate categories for market production, production for own final use and three categories for other non-market production, i.e., in central government, local government and NPIs serving households. There are 126 market production activities specified, 5 activities of production for own final use, and altogether 23 non-market production activities. The latter non-market activities are composed of 7 central government activities, 9 local government activities and 7 activities of non-profit institutions serving households.

9.1.4 In the NNA, the total number of products are around **900 products**, of which almost 800 are ordinary products, while the remaining products are of supporting nature introduced for technical reasons. Out of the ordinary products, about 55 per cent or almost 450 are goods and the rest, about 350, are services. Statistics Norway's **self-evaluation** is that the present product classification applied in the NNA has **enough details**, with a well-adjusted profile between **manufactured products** and **other products**.

Activity classification

9.1.5 The **activity classification scheme** based on NACE Rev.2 used in the NNA for **the year 2019** is illustrated below. Please note that the number in the column "Total number of industries" is the consolidated number of activities (e.g., education in four different categories of production means one NACE-activity in total). A64 specifications are all provided, except for 99 Services provided by extra-territorial organizations and bodies. This is outside the scope of domestic production, i.e., excluded from the activity classification of the NNA and are instead included as part of the activity of the rest-of-the-world sector. The NNA activity details in most cases are either at the **NACE 2-digit** level, at the **3-digit** level, or between these two levels. Norway, therefore, is able to identify 2-digit level of NACE Rev.2 (A64 in ESA) for reporting or other dissemination of annual activity data from the NNA.

Number of economic activities specified in the NNA.

<i>NACE Rev.2 A64 specification</i>			<i>Total number of industries (consolidated)</i>	<i>Type of producer</i>		
				<i>Market</i>	<i>Own final use</i>	<i>Other non-market</i>
A	01	Crop and animal production, hunting and related service activities	2	2	1	
	02	Forestry and logging	2	2		
	03	Fishing and aquaculture	2	2	1	
B	05-09	Mining and extraction	6	6		
C	10-12	Manufacture of food products, beverages and tobacco	11	11		
	13-15	Manufacture of textiles, wearing apparel and leather products	3	3		
	16	Manufacture of wood and of products of wood and cork, except furniture, manufacture of articles of straw and plaiting materials, except furniture	1	1		
	17	Manufacture of paper and paper products	1	1		
	18	Printing and reproduction of recorded media	1	1		
	19	Manufacture of coke and refined petroleum products	1	1		
	20	Manufacture of chemicals and chemical products	3	3		
	21	Manufacture of basic pharmaceutical products and pharmaceutical preparations	1	1		
	22	Manufacture of rubber and plastics products	1	1		
	23	Manufacture of other non-metallic mineral products	4	4		
	24	Manufacture of basic metals	4	4		
	25	Manufacture of fabricated metal products, except machinery and equipment	2	2		
	26	Manufacture of computer, electronic and optical products	1	1		
	27	Manufacture of electrical equipment	1	1		
	28	Manufacture of machinery and equipment n.e.c.	1	1		
	29	Manufacture of motor vehicles, trailers and semi-trailers	1	1		
	30	Manufacture of other transport equipment	3	3		
	31-32	Manufacture of furniture and other manufacturing	2	2		
	33	Repair and installation of machinery and equipment	2	2		
D	35	Electricity, gas, steam and air conditioning supply	4	4		
	36	Water collection, treatment and supply	1	1		1

<i>NACE Rev.2 A64 specification</i>			<i>Total number of industries (consolidated)</i>	<i>Type of producer</i>		
				<i>Market</i>	<i>Own final use</i>	<i>Other non-market</i>
E	37-39	Sewerage; Waste collection, treatment and disposal activities, materials recovery; Remediation activities and other waste management services	3	3		2
F	41-43	Construction	4	4	1	
G	45	Wholesale and retail trade and repair of motor vehicles and motorcycles	1	1		
	46	Wholesale trade, except of motor vehicles and motorcycles	1	1		
	47	Retail trade, except of motor vehicles and motorcycles	1	1		
H	49	Land transport and transport via pipelines	5	5		
	50	Water transport	4	4		
	51	Air transport	1	1		
	52	Warehousing and support activities for transportation	3	3		
	53	Postal and courier activities	1	1		
I	55-56	Accommodation and food service	2	2		
J	58	Publishing activities	1	1		
	59-60	Motion pictures, video and television programme production, sound recording and music publishing activities; Programming and broadcasting activities	2	2		
	61	Telecommunications	1	1		
	62-63	Computer programming, consultancy and related activities; Information service activities	2	2		
K	64	Financial service activities, except insurance and pension funding	3	3		
	65	Insurance, reinsurance and pension funding, except compulsory social security	3	3		
	66	Activities auxiliary to financial services and insurance activities	1	1		
L	68	Real estate activities	2	2	1	
M	69-70	Legal and accounting activities; Activities of head offices, management consultancy activities	2	2		
	71	Architecture and engineering activities, Technical testing and analysis	1	1		
	72	Scientific research and development	1	1		
	73	Advertising and market research	1	1		
	74-75	Other professional, scientific and technical activities; Veterinary activities	2	2		
	77	Rental and leasing activities	1	1		
	78	Employment activities	1	1		

<i>NACE Rev.2 A64 specification</i>		<i>Total number of industries (consolidated)</i>	<i>Type of producer</i>		
			<i>Market</i>	<i>Own final use</i>	<i>Other non-market</i>
N	79	Travel agency, tour operators and other reservation service and related activities	2		
	80-82	Security and investigation activities; Services to buildings and landscape activities; Office administrative, office support and other business support activities	3	3	
O	84	Public administration and defence, compulsory social security	3		4
P	85	Education	1	1	3
Q	86	Human health activities	1	1	3
	87-88	Residential care activities; Social work activities without accommodation	3	3	4
R	90-92	Creative, arts and entertainment; Libraries, archives, museums and other cultural activities; Gambling and betting activities	3	3	4
	93	Sports activities and amusement and recreation activities	1	1	1
S	94	Activities of member- ship organisations	1	1	1
	95	Repair of computers and personal and household goods	1	1	
	96	Other personal service activities	1	1	
T	97	Activities of households as employers, undifferentiated goods and service producing activities of households for own account	1		1

9.1.6 Most activities are **market**, just four NNA activity items occur exclusively outside market activities. These are one activity exclusively for **own final use**: private household with employed persons (A97). Furthermore, there are three **other non-market** activities that are exclusive: public administration and compulsory social security activities; defense activities and other government activities, all items in A84. Apart from these, there are activities for own final use that are split, i.e., one part market, one part production for own final use (agriculture; fishing; general construction of buildings etc. and dwelling services production of owner-occupiers). The same occurs for other non-market, i.e., **one part market, one part non-market**. These comprise the following NNA activities:

-	360	Water collection, treatment and supply (A36)
-	370	Sewerage (A37)
-	380	Waste collection, treatment and disposal activities (A38)
-	850	Education (A85)
-	860	Human health activities (A86)
-	870	Social work activities (items in A87 and A88)
-	882	Kindergartens (item in A88)
	900	Creative arts and entertainment activities (A90)
-	910	Libraries, archives, museums and other cultural activities (A91)
	930	Sports and recreation activities (items in A93)
	940	Activities of membership organizations (A94)

It should be added that these split market/non-market activities, for the non-market part in several instances are further split on all three sub-groupings of non-market production (central government, local government and NPISHs).

Product classification

9.1.7 The **product classification scheme** used in the NNA is based on the CPA. In presenting this scheme, we use the approach of the 2-digit CPA (see table below). The presentation also shows that Norway could provide a product breakdown according to the CPA 3-digit level in the national accounts.

9.1.8 Norway has continued to apply a relatively **detailed product classification** scheme, although efforts have been made lately to reduce the number of products and product flows significantly to a more manageable body of details, in particular for manufactured goods. All in all, there are around 900 products specified, of which about 800 can be labeled ordinary or characteristic products. Among these almost 450 are goods, of which there are 340 manufacturing products. The remaining are goods outside manufacturing. Around 350 services products are specified. In general, the NNA product details are typically somewhat between 5-digit and 6-digit CPA.

9.1.9 The distinction between **market output**, **output for own final use** and **other non-market output** is not entirely and systematically drawn up in this context as products. It means, for instance, that products for own final use have been specified along with other products (e.g., there are specified products for own final consumption in agriculture, forestry and fishing). Products of non-market producers are given special attention as concern services of central and local government, while not for NPISH producers. Products of the latter are the same as relevant for market producers. For central and local government producers, however, we have found it convenient - e.g., for deflation purposes - to specify directly a double set of products, one for their services as such and one for fees connected to the same services. This solution significantly increases total number of products.

9.1.10 About 150 additional products are introduced for technical and other reasons. These are not defined as characteristic of any activities. Mainly, they appear as intermediate aggregated products through which the commodity flows are more easily allocated among users. A typical case is small items of office accessories that are purchased and consumed over the whole range of industries. Such articles are channeled from producers to an auxiliary industry (dummy) that collects these small items and "produces" from it one single aggregate item (product), which again is more easily distributed among the industries for intermediate consumption. Other product aggregates serving the same purpose of easing the product allocation among users, are ancillary costs like postal services, transport costs, telecommunications, business entertainment etc. Costs of repairs and maintenance are treated in the same way. Furthermore, various unspecified products of balance of payments, mostly imports, are introduced for various kinds of adjustments, which will be described in their appropriate context. Then, there are some products not connected to any particular industry, such as own-account construction and the like. A last category of "products" is items that are aggregated fixed assets through which gross fixed capital formation or net acquisition of existing fixed assets is cross classified for industry destinations.

9.1.11 The NNA products are **coded** identical with the CPA when applied directly at these levels. When applied between 5- and 6-digit levels, codes are closely related as well in combining 6-digit items.

Number of products specified in the NNA

<i>CPA 2-digit level</i>	<i>Number of NNA-products</i>
01 Products of agriculture, hunting and related services	43
02 Products of forestry, logging and related services	10
03 Fish and other fishing products, services incidental to fishing	19
05 Coal and lignite	1
06 Crude petroleum and natural gas	4
07 Metal ores	1
08 Other mining and quarrying products	4
09 Mining support services	3
10 Food products	52
11 Beverages	8
12 Tobacco products	1
13 Textiles	12
14 Wearing apparel; furs	1
15 Leather and leather products	3
16 Wood and products of wood and cork, articles of straw etc.	13
17 Pulp, paper and paper products	11
18 Printed matter and recorded media	5
19 Coke, refined petroleum products and nuclear fuel	18
20 Chemicals, chemical products	37

<i>CPA 2-digit level</i>	<i>Number of NNA-products</i>
21 Basic pharmaceutical products	4
22 Rubber and plastic products	10
23 Other non-metallic mineral products	26
24 Basic metals	30
25 Fabricated metal products	23
26 Computers, electrical and optical instruments	24
27 Electrical machinery and apparatus	13
28 Machinery and equipment	20
29 Motor vehicles, trailers and semi-trailers	10
30 Other transport equipment	21
31 Furniture	5
32 Other manufactured goods	9
33 Repair	11
35 Electricity, gas, steam, and hot water	7
36 Natural water, water treatment services	5
37 Sewage and refuse disposal services	5
38 Waste collection services etc.	12
39 Remediation services and other waste management services	1
41 Buildings and building construction works	5
42 Construction work for civil engineering	1
43 Specialized construction work	11
45 Trade, maintenance, and repair services of motor vehicles	5
46 Wholesale trade and commission trade services	1
47 Retail trade services	2
49 Land transport and transport via pipeline services	18
50 Water transport services	12
51 Air transport services	4
52 Supporting and auxiliary transport services	16
53 Post and communication services	4
55 Accommodation services	3
56 Food and beverages serving services	4
58 Publishing services	6
59 Motion picture, video, television, sound recording services	4
60 Programming and broadcasting services	2
61 Telecommunication services	4
62 Computer programming, consultancy and related services	4
63 Information services	4
64 Financial intermediation services	16
65 Insurance and pension funding services	5
66 Services auxiliary to financial intermediation	6
68 Real estate services	15
69 Legal and accounting services	2
70 Services of head offices, management consulting services	2
71 Architectural and engineering services, testing and analysis services	9
72 Scientific research and development services	4
73 Advertising and market research services	2
74 Other professional, scientific and technical services	4
75 Veterinary services	2
77 Rental and leasing services	11
78 Employment services	1

<i>CPA 2-digit level</i>	<i>Number of NNA-products</i>
79 Travel agencies and tour operator and other reservation services	3
80 Security and investment services	2
81 Services to buildings and landscape	2
82 Office administration and support, and other business services	4
84 Public administration and defense services; compulsory social security	22
85 Education services	24
86 Human health services	41
87 Residential care services	10
88 Social work services	23
90 Creative, arts and entertainment services	8
91 Library, archive, museum and other cultural services	15
92 Gambling and betting services	1
93 Sporting, amusement and recreational services	9
94 Services furnished by membership organization	4
95 Repair services of computers and household goods	2
96 Other personal services	6
97 Services of households as employers	1
99 Services provided by extra-territorial organizations and bodies	(0)

Market/ non-market distinction

9.1.12 In Norway, national accounts as well as economic models requiring national accounts data have a long-established tradition for categorizing among **type of producers**. In almost all such cases, industry breakdowns have been subordinated to types of producers.

9.1.13 In the NNA, Statistics Norway has adopted the **market versus non-market distinction** of producers and production. This is expressed in the coding system through prefix to the activity classification. Their respective percentage shares of total value added by industries and of GDP in 2019 are indicated below. Shares of total value added are approximately 73 per cent from market production, 4 per cent production for own final use and 23 per cent from other non-market production.

Categories of market and non-market production. Per cent. 2019.

<i>Categories of production</i>	<i>Percentage of total VA</i>	<i>Percentage of GDP</i>
23 Market production	72.9	64.7
22 Production for own final use	4.1	3.7
24 Other non-market production of central government	9.8	8.7
25 Other non-market production of local government	11.5	10.2
26 Other non-market production of NPISHs	1.7	1.5
Net taxes on products		11.2
Total	100.0	100.0

9.1.14 Those five groups of market and non-market categories are used throughout all variables or items **by industry**. Output, intermediate consumption, value added, compensation of employees, wages and salaries, employers' social contributions, other taxes on production, other subsidies on production, consumption of fixed capital, operating surplus, mixed income, gross fixed capital formation, number of employed persons, number of employees and self-employed, full-time equivalent persons, jobs, sex and education and hours worked, are all estimated with such a

breakdown. In fact, these are considered elements of **bottom-up building blocks** rather than from a top-down distribution.

9.2 Classifications used for the income approach

9.2.1 The **main classification scheme** used in the NNA for the estimation of GDP according to the income approach is the **activity classification based on NACE Rev.2**. The activity classification applies to all income approach aggregates - compensation of employees, operating surplus/mixed income, consumption of fixed capital, other taxes on production and other subsidies on production.

9.2.2 The NACE Rev.2-based activity classification is already described in section 9.1. Statistics Norway's **self-evaluation** on the present activity classification (see 9.1.2 above) thus applies for the income approach as for the production approach. It is adopted with the **same degree of detail for all income approach aggregates**. In addition, the same activity classification is used for each of the categories specified under compensation of employees. It may be added that the calculations for the manufacturing part - for the variables such as compensation of employees as well as employment - follow a two-stage procedure, initially at the aggregated level used in the quarterly accounts, but eventually adapted to the detailed activity specification level of the annual accounts.

9.2.3 There are as well groupings or breakdowns that provide more details for most of these aggregates. These are groupings of compensation of employees **by category**, consumption of fixed capital **by type of fixed assets**, other taxes on production **by type** and other subsidies on production **by type**.

9.2.4 Compensation of employees (D.1) has two main categories or components:

- | | |
|------|--|
| D.11 | Wages and salaries |
| D.12 | Employers' social contributions |

9.2.5 Each of the two main components consists of two items:

- | | |
|-------|--|
| - | Wages and salaries in cash |
| - | Wages and salaries in kind |
| D.121 | Employers' actual social contributions |
| D.122 | Employers' imputed social contributions |

9.2.6 In the NNA, employers' actual social contributions are further specified into two sub-items:

- | | |
|---|---|
| - | Employers' actual social contributions to National Insurance |
| - | Employers' other actual social contributions. |

Employers' contributions to National Insurance are specified separately due to its major role in this context. National Insurance – as the most important social security scheme in Norway – covers old age pensions, disability pensions and other types of social benefits. All employers are obliged to pay contributions to National Insurance for the benefit of their employees.

9.2.7 The classification scheme in the NNA for **gross fixed capital formation** by type of fixed assets is also adopted for **consumption of fixed capital** (K.1). One reason is arriving at net concept of fixed capital formation. The scheme is based on the classification adopted in ESA 2010 and 2008 SNA on fixed assets. Altogether around **50 items** are specified in the NNA, the same items that apply to gross fixed capital formation.

9.2.8 In the NNA, **other taxes on production** (D.29) consist of taxes on production and imports (D.2) other than taxes on products (D.21) that are described elsewhere (in chapter 3). Other taxes on production (D.29) are further broken down into **35 types** of taxes. This is done to serve special analytical needs.

9.2.9 In the NNA, **other subsidies on production** (D.39) consist of subsidies (D.3) other than subsidies on products (D.31) that are described elsewhere (in chapter 3). Other subsidies on production (D.39) are further broken down into **14 types** of subsidies to serve special analytical needs.

9.3 Classifications used for the expenditure approach

Summary

9.3.1 The **main classification schemes** used in the NNA for the estimation of GDP according to the expenditure approach in the field of **consumption** are the purpose or purpose-like classifications of **COICOP**, **COFOG** and **COPNI**. They are used for final consumption expenditure of households, general government and NPISHs, respectively. The existing international versions have been implemented, while more detailed (see below). Statistics Norway's **self-evaluation** is that the present functional classifications applied in the NNA have **enough details**, with a hierarchal structure in **three levels of aggregation**. All these features contribute and lead to reliable ESA 2010-based NA estimates.

9.3.2 Other classifications used are the classifications of **fixed assets** and of activities used for **gross fixed capital formation (GFCF)**, and breakdown on **categories of inventories**, and on **exports and imports**.

9.3.3 **COICOP** for household consumption expenditure in the NNA is relatively detailed, specifying **106 consumption groups** within the framework of 12 main groups. The classification is structured at three different levels of aggregation.

9.3.4 In the NNA the **COFOG** framework has 10 main groups, and the **number of COFOG groups** is **53 in central government** and **29 in local government**. COFOG in the NNA has got a second dimension by being cross-classified by products and subsequently linked with the activities. **COPNI** for final consumption expenditures in NPISHs is specified by **5 items**, here also cross-classified by detailed products.

9.3.5 The classification by **type of fixed assets** is also relatively detailed. The number of groups is **more than 50** in the NNA, within the framework of 8 aggregated groups. GFCF is also broken down by **kind of activities**, with full accordance with the activity classification in production.

9.3.6 For the other final uses, there are less detailed breakdowns by categories. As main breakdown for **changes in inventories** is by detailed products (NNA-products), only **7 categories** of inventories are specified. Altogether, **4 categories** have been introduced for **exports of goods and services** and **imports of goods and services** (2 categories of exports and 2 categories of imports), i.e., a split between exports and imports according to the customs based External Trade in Goods statistics and other. Here also, the main breakdown is by detailed products.

COICOP

9.3.7 The classification scheme used in the NNA for **household final consumption expenditure** and **household actual consumption** (i.e., individual consumption) is the present COICOP that was adopted by the UN Statistical Commission in 1999. As many as 106 consumption groups or categories are specified at the detailed level, while for publication and analytical purposes two more aggregated levels is introduced, using the coding structure in a hierarchal manner. Thus, in the present NNA there are 106 consumption groups at detailed level, 48 consumption groups at intermediate level and 12 consumption groups at aggregated level.

9.3.8 The composition between **consumption goods** and **consumption services** has over time been changed significantly towards more service specifications. In addition, the two **correction items** (direct purchases abroad by residents and direct purchases in Norway by non-residents) have continued being used in the NNA. For the time being, information is lacking on COICOP groups for distribution of direct purchases abroad by residents. As illustrated above, information is however available on distribution of direct purchase in Norway by non-residents and presented in the Satellite accounts for Tourism.

9.3.9 At aggregated (**1-digit level**), the NNA has adopted the same structure as in COICOP. That refers to the 12 aggregated consumption groups of COICOP. In terms of codes, the COICOP groups 01-12 have been replaced by 1-digit letter codes A through L in the NNA. At intermediate (**2-digit level**), the coding system of the NNA has added 1-digit codes to the preceding letter code. At detailed (**3-digit level**), the coding system used in the NNA has added 2-digit codes to the relevant letter code. This coding structure is exemplified below by the first entry (61A11):

61 = Household final consumption expenditure
A = Food and non-alcoholic beverages
A1 = Food
A11 = Bread and cereals

9.3.10 The COICOP version with its structure used in Norway is illustrated below. It shows the level of detail with the 3-level structure. Distribution by non-tourist/tourist categories (prefix 61, 68 and 69) is added to the table for use in the Satellite accounts for Tourism.

COICOP and number of household consumption groups specified in the NNA (prefix 61).

<i>Aggregated level (1-digit)</i>	<i>Intermediate level (2-digits)</i>	<i>Detailed level (3-digits)</i>
01 Food and non-alcoholic beverages	2	11
02 Alcoholic beverages, tobacco and narcotics	3	5
03 Clothing and footwear	2	6
04 Housing, water, electricity, gas and other fuels	5	10
05 Furnishings, household equipment and routine maintenance of the house	6	12
06 Health	3	7
07 Transport	3	12
08 Communications	3	3
09 Recreation and culture	6	20
10 Education	4	4
11 Restaurants and hotels	2	3
12 Miscellaneous goods and services	9	13
Total number of consumption groups in NNA	48	106

9.3.11 Two COICOP groups, **narcotics and prostitution**, were introduced in the 2011 main revision.

9.3.12 As already stated, the overall **correction items**

-	Direct purchases abroad by resident households
-	Direct purchases in Norway by non-resident households

are in use until further work (also tourism satellite accounts) has been carried out on distributing these two items on the respective and relevant consumption groups (see 9.3.8 above).

9.3.13 Finally, the NNA has a **complementary classification** by which the consumption groups are classified either as consumption goods or consumption services and the former category also **by durability** (non-durable, semi-durable and durable). The consumption groups are **not published** by a breakdown of durability (reflecting that 2008 SNA and ESA 2010 do not present such a breakdown).

COFOG

9.3.14 The classification scheme used in the NNA for **government final consumption expenditure** (and **collective consumption**) is based on the last version of COFOG. In the sphere of final uses, COFOG is applied for both central government consumption expenditure and local government consumption expenditure. The level of detail for which COFOG is applied corresponds with the structure of the existing international COFOG standard. It means **10 main groups** at the aggregated level, and altogether **82 groups** are specified at the **intermediate level** used in the NNA. Of these, **53 groups** are used as relevant for **central government consumption**, while less detailed in **local government consumption** at **29 groups**. More detailed breakdown is not implemented in the NNA but is available in the government accounts.

9.3.15 In the NNA, COFOG is **cross-classified by products**. Each of the detailed COFOG groups now has a product breakdown from the CPA-based product classification generally applied in the NNA. The COFOG-by-product flows have been set up in a rather pragmatic way. The starting point

has been the current items and sub-items of the government accounts. A relevant NNA product has been connected to each of these items, in some instances easily determined, in other instances more difficult to determine when certain reasonable conventions or considerations had to be taken into account.

9.3.16 Summary illustrations on purposes are provided below.

COFOG and number of purposes specified in the NNA (prefix 64 and 65).

<i>Aggregated level</i>	<i>Intermediate level of central government</i>	<i>Intermediate level of local government</i>
COFOG		
01 General public services	6	3
02 Defense	4	-
03 Public order and safety	5	1
04 Economic affairs	9	3
05 Environment protection	4	3
06 Housing and community amenities	1	2
07 Health	6	3
08 Recreation, culture and religion	3	4
09 Education	8	5
10 Social protection	7	5
Total number of purposes specified	53	29

9.3.17 The COFOG version used in Norway is further illustrated by its **connection to products**. The numbers of COFOG groups-to-product flows are shown in this table, not number of products as such. The table refers to central government only and depicts the situation in 2019. In most COFOG groups, the product flows involving characteristic products of public administration and defense services, compulsory social security services dominate.

COFOG and number of products specified in the NNA.

<i>Aggregated level</i>	<i>Number of NNA-products in central government (non-consolidated count)</i>
COFOG	
01 General public services	20
02 Defense	18
03 Public order and safety	16
04 Economic affairs	30
05 Environment protection	14
06 Housing and community amenities	3
07 Health	51
08 Recreation, culture and religion	14
09 Education	29
10 Social protection	28
Total number of purposes specified	223

COPNI

9.3.18 Like for COICOP and COFOG, a **new breakdown** was implemented in the NNA with the main revision in 2002. The new standard was restructured at the level of 5 items (note reference to the COFOG in parenthesis).

-	Health (F00)
-	Cultural and recreational services (I40)
-	Education (J00)
-	Welfare (L41)
-	Religious and humanitarian purposes (L70)

Gross fixed capital formation by type of fixed assets

9.3.19 The classification scheme in the NNA for **gross fixed capital formation by type of fixed assets** is based on the classification adopted in ESA 2010 (and 2008 SNA) on fixed assets. Here AN.11 Fixed assets specify 17 categories of fixed assets at most disaggregated level. These are all identified in the NNA, including items for cultivated assets and intellectual property products, but without the disaggregation of computer software and databases. On the other hand, roads and streets are separated from other structures. In total 53 detailed items are specified when taking account of the identification of own account investment work.

9.3.20 The following table presents the classification of type of fixed capital in the NNA.

Classification of type of fixed capital in the NNA.

<i>Aggregated type of fixed capital</i>	<i>Detailed type of fixed capital</i>
1 Dwellings	100 Dwellings and holiday homes
	108 Own account capital formation
	180 Transaction costs existing dwellings
	190 Transaction costs land and sites
2 Non-residential buildings	200 Non-residential buildings
	208 Own account capital formation
	290 Transaction costs non-residential buildings
3 Other structures	300 Improvements to land in agriculture and forestry
	308 Own account improvements to land
	310 Railroad tracks and bridges
	320 Power supply transmission lines
	330 Power supply stations
	340 Roads and streets
	348 Own account capital formation roads and streets
	350 Other structures
	358 Own account capital formation other structures
	370 Wells for oil and gas extraction
	378 Own account capital formation wells
	380 Petroleum rigs and platforms
	388 Own account capital formation rigs and platforms

<i>Aggregated type of fixed capital</i>	<i>Detailed type of fixed capital</i>
	389 Decommissioning costs petroleum sites
	390 Petroleum pipelines
	398 Own account capital formation pipelines
4 Transport equipment	410 Ships and boats
	420 Aircraft and helicopters
	430 Passenger cars and station wagons
	440 Buses
	450 Vans and lorries and special purpose vehicles
	460 Passenger cars for occupational hire
	470 Locomotives and rolling stock
5 Machinery and equipment	508 Own account capital formation machinery
	510 Machinery for agriculture and forestry
	520 Machinery for mining and manufacturing
	530 Machinery for power plants
	540 Machinery for construction
	550 Machinery for other use
	560 Computer and office equipment
	570 Equipment for telecommunication
	590 Weapons and weapons systems
6 Cultivated assets	610 Livestock for breeding, dairy, draught
	650 Vineyards, orchards and other plantation trees
7 Intangible fixed assets	710 Mineral and petroleum exploration
	718 Own account capital formation exploration
	720 Research and development (R&D)
	728 Own account capital formation R&D
	740 Software
	748 Own account capital formation software
	760 Literary and artistic originals
	768 Own account capital formation originals
9 Valuables	990 Antiques, art pieces and other valuables

9.3.21 Statistics Norway provides also a detailed **product breakdown** of fixed capital formation in supply and use tables on a current basis, in addition to a detailed **breakdown of gross fixed capital formation by industry**. The cross-classifications in the NNA are organized in the following sequence: (i) producers (industries or imports) by products, (ii) products by type of fixed assets, (iii) type of fixed assets by identical aggregated products, and (iv) aggregated products by industries for investment use.

Gross fixed capital formation by activities

9.3.22 The classification scheme in the NNA for gross fixed capital formation **by activities or industries** is more based on national interests and traditions than by recommendations or requirements in 2008 SNA and ESA 2010. In Norway, gross fixed capital formation by activity is considered more important information than any other breakdown of gross fixed capital formation, most of all to accommodate **productivity analysis**. In ESA 2010, however, this breakdown is basically referred to as a supplementary breakdown called for in the framework of the supply and use tables (bottom section of the use table).

9.3.23 In the NNA, the breakdown by activity of gross fixed capital formation (GFCF) is as detailed as the **activity breakdown in production**. Although this might be questioned from the point of statistical

sources available, such a one-to-one correspondence is considered a valuable basis for the compilation of such data. It also means separate items for GFCF by category of production, i.e., in **market production, production for own final use** and in **non-market production** distinguished in central government, local government, and NPISH. In practice, however, GFCF will be taken to be zero in some of the activities producing for own final use.

9.3.24 So far, no effort has been made to provide a modified treatment in the supply and use tables from reclassification of fixed capital formation to be recorded as if owned by the user (apart from the treatment of capital goods under financial leasing contracts).

Categories of inventories

9.3.25 In the context of GDP by expenditure approach, a classification of categories of inventories may seem appropriate for a breakdown of changes in inventories. The ESA95 classification of **inventories within produced assets** is such a classification basis.

9.3.26 The ESA 2010 categories of materials and supplies, finished goods and goods for resale are **not explicitly shown** in the Norwegian national accounts. Although there is some information on materials and supplies and finished goods, respectively, in manufacturing statistics, such information are lacking in other areas, so that the whole picture is too scattered to go along with such a breakdown. Furthermore, no direct inventory information on goods for resale has been available from retail and wholesale trade statistics. The **3-split breakdown of inventories** - apart from work in progress - is therefore **a target** set for future research.

9.3.27 **Work in progress on goods** also belongs to changes in inventories. It has a breakdown of two items in the NNA. Due to their special importance in the Norwegian economy, work in progress on modules to oil platforms and ships are separately identified. Two types of work in progress on cultivated assets are shown. They are related to livestock for slaughter, stocks of timber or fruit tree, and farmed fish.

9.3.28 **Changes in inventories for services** – interpreted as services-in-progress - are introduced for selected services items.

9.3.29 The main item of changes in inventories has a cross-classification **by products**, in the NNA broken down by detailed NNA-products. This feature is part of the commodity-flow approach used in Norway, resulting in annual supply and use tables.

Categories of exports and imports

9.3.30 In ESA 2010, exports of goods and services (P.61 and P.62) and imports of goods and services (P.71 and P.72) thus are broken down into the two categories, each of which is of course cross-classified with a set of products. In the NNA, the structure of four categories by product details has also been introduced. The four categories are however a split between **exports and imports according to the External trade in goods statistics** and **other exports and imports**. A split between goods and services is reached by identifying goods versus services on a detailed product level.

Chapter 10 serves as a guide to the system of statistical surveys and other data (e.g., administrative and fiscal data sources) used as the basis for the national accounts in Norway.

10.0 Overview

10.0.1 The table given below presents in **alphabetical order** the inventory of data sources used in national accounts compilation in Norway. It is noticed that the majority of these data sources for the GDP estimation are the same from two or three approaches. Also noticed is that for the majority of industries **Structural Business Statistics** were in use for 2019. These are marked with **SBS in parenthesis**. Some of the sources were not used directly for 2019 estimations. They are still referred to in the list because these sources were used in benchmarking in earlier years and through extrapolation are of relevance for the levels in 2019.

10.0.2 The third column of the table relates to the production approach, the fourth to the income approach, and the fifth to the expenditure approach, while the last column relates to the transition from GDP to GNI. Altogether 75 sources are listed. Those considered **main sources** - approximately one half - are designated as **A sources**, while those not regarded as main sources are designated as **B sources**. The latter is also described in a more summarized way by text than are the main sources. When a source is considered more important for one approach but still used in other approaches, this is indicated by reference given in one of the other columns. Altogether 75 sources are listed for the four sections.

Example: Source 1 Accounting data of SAS is indicated with A as main source and recorded as used for production approach, while also listed as used for expenditure approach, with an indication of 10.1, meaning the main use of that source is for production approach, but is also used for the expenditure approach, and described in the list of section 10.1.

Inventory of sources used for national accounts

<i>Ref</i>	<i>Source</i>	<i>Production approach</i>	<i>Income approach</i>	<i>Expenditure approach</i>	<i>GNI</i>
1	Accounting data SAS (Scandinavian Airlines)	A		10.1	
2	Accounting data State Broadcasting Company NRK (SBS)	B		10.1	
3	Accounting statistics air transport companies (SBS)	B			
4	Accounting statistics private non-financial enterprises	B			
5	Accounting statistics self-employed	10.2	A		
6	Accounting statistics wholesale and retail trade (SBS)	B			
7	Accounts statistics telecom services (SBS)	A		10.1	
8	Accounts/statistics various transportation services (SBS)			B	

9	Accounts nation-wide betting institutions	B			
10	Accounts statistics postal and courier service (SBS)	B		10.1	
11	Accounts State Railway Corporation Vy	A		10.1	
12	Accommodation statistics guest-nights			B	
13	Aggregate account agriculture	A		10.1	
14	Aggregate account forestry	B		10.1	
15	Building statistics			A	
16	Catch statistics	A			
17	Census data fish farming	A		10.1	
18	Central government statistics	10.3	10.3	A	
19	Construction statistics (SBS)	A		10.1	
20	Consumer Price Index			A	
21	Cost survey data defense activities	10.3		A	
22	Cost survey data education and health activities	B			
23	Cost surveys fishing boats and fish farming	B			
24	Credit market statistics	A		10.1	
25	Cultural statistics	B			
26	Economic surveys supporting services transport (SBS)	B			
27	Electricity statistics	A		10.1	
28	Energy statistics			B	
29	External trade in goods statistics			A	
30	Foreign exchange statistics (ITRS data)	10.3		B	10.3
31	Household budget surveys	10.3		A	
32	Housing statistics	B			
33	Income surveys private medical practitioners, etc.	B		10.1	
34	Index of building costs and price index new dwellings			B	
35	Interest statistics - European Central Bank			B	
36	Interest statistics - Norges Bank (central bank of Norway)	B			
37	KOSTRA – Municipality-State Reporting	10.3	10.3	A	
38	Local government accounts	10.3	10.3	A	
39	Manufacturing statistics (SBS)	A		10.1	
40	Maritime statistics domestic non-scheduled goods (SBS)	B			
41	Maritime statistics regular coastal trade (SBS)	B			
42	Maritime transport statistics (SBS)	A		10.1	
43	Oil and gas activity statistics	A		10.1	
44	Other central government accounts		B		
45	Other services production statistics (partly SBS)	B		10.1	
46	Quantity information beverages and tobacco			B	
47	Research and development statistics	B			
48	Register of vehicles			B	

49	Register of jobs, remuneration, social benefits and taxes paid (<i>A-melding</i> in Norwegian)		A		
50	(Reports) acc. stat. Film and Cinema (SBS)	B			
51	(Reports) accounts statistics travel agencies/tour operators (SBS)	B			
52	Reports on theatres, the opera house and museums	B			
53	Reports tramway and suburban transport companies	B		10.1	
54	Retail trade statistics (SBS)			B	
55	Sample surveys trade margins	A			
56	Scheduled motorbus transport statistics (SBS)	B			
57	Social statistics	B			
58	Social statistics and health statistics			B	
59	Special survey direct investment in Norway				B
60	Statistics from Business Register	B		10.1	
61	Statistics business accounts of hotels/restaurants (SBS)	B		10.1	
62	Statistics business activities etc. (SBS)	A		10.1	
63	Statistics health institutions	B			
64	Statistics new registrations of motor vehicles			B	
65	Structural business statistics, common module (SBS)	A		10.1	
66	Structural business statistics, detailed module in industry (SBS)	A		10.1	
67	Structural business statistics, detailed module on distributive trades (SBS)	A		10.1	
68	Structural business statistics, detailed module in construction	A		10.1	
69	Surveys actual rents	10.3		A	
70	Survey car repair shops etc. (SBS)	B		10.1	
71	Surveys taxi operation industry (SBS)	B			
72	Special survey direct investment abroad				B
73	Tourist/travel statistics			B	
74	UT-statistics: Balance of payments data from non-financial enterprises	10.3	10.3	A	10.3
75	Wholesale and retail statistics (SBS)	A			

10.0.3 In general, data collected in all these **sources are sufficiently detailed** to permit a transition to national accounts concepts. Naturally, due to the very detailed national accounts in Norway, there are **cases that are not served directly with relevant data** but are estimated from distributing keys and the like based on indicators relevant for establishing - fixed or variable - such keys. When applying basic data for the NA, conversion keys or similar links have been established in a detailed and relevant way to meet the NA rules and principles. In some cases, adjustments are to be made (see detailed text throughout the inventory).

10.1 Statistical surveys and other data sources used for the production approach

10.1.1 The **Structural business statistics (SBS)** is the dominating source used for the production approach in the NNA. The following tables presents the main features and core quantitative survey information on the SBS for the various NACE industry sections as organized by the statistical departments of Statistics Norway. On the **enterprise level the SBS is a census**, covering all units in the business register. The units referred to in the table are establishments and the sample relates to the supplement survey (TS) for the **distribution of variables on establishments** and for collecting some additional information.

Structural Business Statistics. Main features.

<i>Link to surveys undertaken at the European level:</i> EU regulation on structural business statistics
<i>Organization collecting the data:</i> Administrative data + Statistics Norway
<i>Reporting units:</i> Enterprises primarily, but also local KAUs
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> Within 16 months after end of accounting year
<i>Sampling frame:</i> Central Register of Establishments and Enterprises (CREE)
<i>Survey is voluntary or compulsory?:</i> Compulsory according to the Statistics Act of 1989. (The 1989 Act was in force when data for 2019 was collected in 2020. It has been replaced by the Statistics Act of 2021.
<i>Main features of methodology:</i> Census of enterprises, sample survey of establishments. The population consists of all active enterprises in the relevant industry in the statistical year and a sample of local KAUs. The population is divided into subpopulations or strata, according to criteria such as industrial classification and number of employees. In some strata all enterprises are included in the sample. In the remaining strata, a representative selection of enterprises is drawn. All enterprises in this sample are asked to report a full set of tax returns and to complete a questionnaire. The questionnaire is adapted to the different industries.
<i>Main variables collected:</i> Where available, income statements, VAT data (VAT Register) and balance sheets are obtained from the tax authorities for the entire population, in addition to annual accounts from the Register of Company Accounts at Brønnøysund, and employment figures from 'A-ordningen'. A questionnaire (often called a supplementary form) is also sent to the enterprises in the sample.
<i>Response rate:</i> Main variables 100 per cent - for additional information see table below
<i>Variable used for grossing-up:</i> Turnover and employment
<i>Methods used to allow for missing data:</i> Turnover and employment are considered full-count variables and are used to estimate the remaining variables for the enterprises outside the sample. The method is based on finding units outside the sample with a corresponding industry code that is similar to a unit in the sample, for the two variables where we have a full count. These units are then allocated values for the other variables based on the given value in the sample. The 'nearest neighbours' method is used to select which units are similar to each other.
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Se chapter 3.4 on transformation from the SBS to the NNA concepts.

Structural Business Statistics. Population, sample and response by NACE section. 2019.

<i>Industry NACE section</i>	<i>Population size (units)</i>	<i>Sample size (units)</i>	<i>Sample %</i>	<i>Coverage employment %</i>	<i>Coverage turnover %</i>	<i>Response %</i>
	427	138	32.32	89.62	85.28	97.10

09.10						
C+05+07+08+09.09	18492	1847	9.99	72.28	80.94	98.43
E	1312	125	9.53	63.50	70.97	99.20
F	58665	1345	2.29	37.65	46.62	98.59
G	49917	3545	7.10	56.77	67.23	98.56
H	20528	1352	6.59	58.51	67.00	98.74
I+79	12756	828	6.49	41.62	46.49	96.74
J	18354	738	4.02	63.56	73.03	98.24
L+M+N+S (ex 94)	138573	2851	2.06	51.50	45.93	98.88

10.1.2 The inventory list retains the original list of sources used before 2002 main revision, and the added new sources introduced after the 2002 revision, in particular modules of **structural business statistics**, i.e. **SBS** as such (common module for annual structural statistics), SBS in industry (detailed module for structural statistics in industry), SBS on distributive trades (detailed module for structural statistics on distributive trades), and SBS in construction (detailed module for structural statistics in construction). These four modules are listed separately below to underline the importance of this new source set. Where original source has been replaced by Structural business statistics, this is marked by **SBS in parenthesis**. Two more very important sources have lately been added to the inventory list above – both relevant for all three approaches, described in section 10.3 on the expenditure approach. These sources are **KOSTRA – Municipality-State Reporting** on government flows, and **UT statistics – Reporting of balance of payments data from non-financial enterprises** on flows with rest of the world.

10.1.3 The sources form a good basis for accurate estimates with satisfactory coverage after having made the necessary adjustments to conform to the NA principles. Coverage has certainly been strengthened by the use of more accounting data, particularly **SBS-based data** covering more and more areas of the total economy. In the inventory, examples are given on what may reduce the quality of the sources. However, with the strong emphasis by Statistics Norway on data collection and the firm commitment to following international NA rules and principles, the present NA compilation situation is considered good and sound, and Statistics Norway holds the view to embrace and take on any improvements if necessary.

Comments on individual sources for the production approach

10.1.4 **Source 1** contains accounting data from the airline company SAS on quarterly as well as annual basis, data being processed by Statistics Sweden and subsequently communicated to Statistics Norway (and Statistics Denmark).

<i>Name of data source: Accounting data of SAS (Scandinavian Airlines)</i>
<i>Organization collecting the data, and purposes for which it is collected: Statistics Sweden</i>
<i>Reporting units: SAS Consortium (SAS airline, SAS Finance and SAS Trading)</i>
<i>Periodicity: Quarterly and annual</i>

<i>Variables collected:</i> Accounting data with details
<i>Methods used to allow for missing data:</i> No information
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Particular and common treatment to allocate transactions to each of the countries concerned in proportion to their shares in the equity of the corporation, i.e., 2/7 for Norway (and 2/7 for Denmark and 3/7 for Sweden).
<i>Further adjustments made to the data:</i> The workshop activity is relocated to manufacturing, while SAS Finance and SAS Trading are considered non-characteristic services produced by air transport

10.1.5 **Source 2** contains accounts of the Norwegian Broadcasting Corporation (NRK) provided on annual basis. They are available in annual reports to the Parliament on the activities of NRK. This source has since 2002 main revision been replaced by/integrated in the new **SBS-based source (source 65)**.

10.1.6 **Source 3** contains reports of accounts from the aviation companies in Norway (one of the two dominating companies, SAS, is treated separately). The reports are compiled by the Civil Aviation Administration and processed in co-operation with Statistics Norway. The statistical forms from the companies involved - a few large companies and about 100 small air transport companies - provide the accounting statistics needed on annual basis. Providers of helicopter services to the oil fields in the North Sea are included as well. This source has since 2002 main revision been replaced by/integrated in the new **SBS-based source (source 65)**.

10.1.7 **Source 4** contains accounting statistics of non-financial enterprises from 1991 onwards, prepared as a means to evaluate a tax reform taken place in Norway in 1992, and to improve on the data sources for the compilation of institutional sector accounts for this sector. Today this source belongs to the A sources, serving as a basis for reconciling estimates of the central framework and of the **institutional sector accounts** at macro level. Earlier in this area of statistics, income and wealth surveys for corporate taxpayers have been conducted. The source material is based on tax data in tax declarations and accounts submitted to the tax authorities. The sample of this survey has been increased gradually, from 3000 in 1991 to a total census as from 2005 through registration electronically. Note also the accounting based **structural business statistics by industries (sources 65-68)**, implemented in the 2002 main revision.

10.1.8 **Source 6** contains accounting statistics of wholesale and retail trade that have taken the form of **structural business statistics (see sources 65 and 67)**.

10.1.9 **Source 7** contains annual data on Information and communication services integrated in the **SBS-based source (source 65)**.

10.1.10 **Source 9** contains reports of the national-wide institutions of gambling and betting activities (Norwegian Pools Ltd., Norsk Rikstoto) providing data on annual basis. They provide relevant information on most important gambling and betting services.

10.1.11 **Source 10** is since 2002 main revision part of the **SBS-based source (source 65)** and covers post and courier activities.

10.1.12 **Source 11** contains annual accounting statistics on rail transport activities integrated in the **SBS-based source (source 65)**.

10.1.13 **Source 13** contains annual aggregate accounts of agriculture, consisting of production and income data generated in this industry from the use of factors of production in agriculture in the year of account. Specifications are quite detailed, to a large extent based on prices and quantity data. Production and incomes data are related to sale of agricultural products and products for own final

consumption. The expenditure side (intermediate consumption) is equally detailed. Incomes of the agricultural population outside the agriculture industry are not covered.

<i>Name of data source:</i> Aggregate account of agriculture
<i>Organization collecting the data, and purposes for which it is collected:</i> Budgeting Committee for Agriculture (BCA) responsible for working out the aggregate account of agriculture
<i>Reporting units:</i> Farms of the agriculture industry
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Production and income items, mostly in terms of prices and quantity data
<i>Methods used to allow for missing data:</i> Underlying basic agricultural statistics are used, BCA regarded as an intermediate set of accounting data, almost exhaustive source for estimating agricultural output
<i>Adjustments made for conceptual differences from national accounts concepts:</i> BCA income is adjusted to arrive at output in NNA in basic prices and operating costs in BCA to intermediate consumption in NNA (small adjustments)
<i>Further adjustments made to the data:</i> See chapter 3 above

10.1.14 Source 14 contains an aggregate account of forestry, similar but less detailed than the one on agriculture. It is a table published by Statistics Norway in the annual publications on Forestry statistics, calculated according to principles and definitions in the national accounts. This source has been prepared according to the ESA95 framework. The activities covered have been extended to comprise services related to forestry (felling, off-road haulage, timber scaling, and drawing up management plans and timber floating). Income and expenditure from hunting and fishing are calculated. Services delivered by contractors are included in the expenditure. Silviculture and building of forest roads are partly treated as being performed by the forestry and partly by others.

10.1.15 Source 16 contains data on the fishing industry in publications of Fishery Statistics, issued by Statistics Norway. One chapter comprises catch data for marine fish landed by Norwegian fishermen in Norway or abroad, including the catch of salmon and sea trout, sealing, whaling fish farming and the fisheries in other countries. Another chapter deals with foreign landings in Norway. The catch statistics from the Directorate of Fisheries contain detailed data on quantities and values by fish species.

<i>Name of data source:</i> Catch statistics
<i>Organization collecting the data, and purposes for which it is collected:</i> Published by Statistics Norway as part of Fishery Statistics, a statistical survey of the fishing industry that comprises a sample of accessible statistics. Data system of the Directorate of Fisheries comprises all catches by Norwegian registered vessels in the sea fisheries. Information about foreign landings in Norway is also available
<i>Reporting units:</i> Sales organizations deliver information to Directorate of Fisheries on landings of vessels ("establishment" unit)
<i>Periodicity:</i> Quarterly, while published annually by Statistics Norway
<i>Variables collected:</i> Quantities and values of landed fish species, type of fishing gear, disposition of the catch, fishing-ground, landing place and the register identification of the vessel
<i>Methods used to allow for missing data:</i> Excepted is sealing, whaling, seaweed, oyster, mussel and landings that are not registered by sales organizations and unregistered sales of fish. Rearing of fish and fishery for own consumption are not included
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Not relevant
<i>Further adjustments made to the data:</i> Lacking information is estimated for national accounts (see chapter 3 above)

10.1.16 **Source 17** contains annual data on fish farming, inter alia information on sales and purchases of fish, labor input, number of workers, fixed capital formation and foreign trade. The material is mainly based upon annual information from the fish farmers, collected by the Directorate of Fisheries.

<i>Name of data source:</i> Census data of fish farming
<i>Organization collecting the data, and purposes for which it is collected:</i> Directorate of Fisheries responsible for the collection and for annual preliminary statistics; Statistics Norway responsible for preparing and publishing the final statistics
<i>Reporting units:</i> Fish farmers, all operating units covered (unit = license given for fish farming)
<i>Periodicity:</i> Annual
<i>Variables collected:</i> Sales, purchases, exports, imports, losses, capacity utilized, workers, labor input, number of units
<i>Methods used to allow for missing data:</i> Verification of data made by the Directorate of Fisheries after first control by local fishery authorities, once more at Statistics Norway before publishing
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Treatment of smolt (breeding as work in progress)
<i>Further adjustments made to the data:</i> Processing errors, manual used to ensure the quality of revision during several controls revealing possible and absolute errors

10.1.17 **Source 19** contains statistics for the construction industry. This source is adapted to the EU regulation on structural statistics, which primarily requires statistics at the enterprise level. Statistics on the local KAUs have also been compiled for some variables for national accounts and other Norwegian users. By all means, this source has since 2002 main revision been replaced by/integrated in the new **SBS-based source (source 68)**.

10.1.18 **Source 22** contains more detailed cost data than usually provided in the central and local government accounts. This source has been used for structural purposes, i.e., for composition of intermediate consumption by products in general government. It refers to cost survey data available for education and health activities in local government. For education, the Ministry of Education conducted an accounting survey of schools of primary and secondary education for the years 1986 and 1990. For health, survey data were obtained from annual statistics on somatic and mental hospitals in local government. **The new source KOSTRA** is now the relevant source for local government (see **source 37** described in section 11.3).

10.1.19 **Source 23** contains cost data (averages by boat) from annual cost surveys of fishing boats, managed by the Budgeting Committee of Fishery in preparing The Fishing Sector Account. A similar cost survey is available for fish farming. A grossing up procedure is necessary to utilize these data for intermediate consumption in the NNA.

10.1.20 **Source 24** contains accounting statistics for all financial institutions, statistics on markets of loans and securities, statistics on foreign assets and liabilities and foreign ownership in Norway, financial balance sheets statistics by institutional sectors etc. Most relevant as a main basic source for the compilation of national accounts are the various accounting statistics for financial enterprises on annual basis. Profit and loss account and balance sheet by financial instrument are provided in tables for 10 different kinds of financial institutions. This source could be seen as related to the SBS as source.

<i>Name of data source:</i> Credit market statistics (major part NACE K)
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway has been collecting these statistics from the financial corporations

<i>Reporting units:</i> Enterprises (financial). Required to report are the Central Bank of Norway, banks, state lending institutions, mortgage companies, finance companies, life insurance companies etc., non-life insurance companies etc., private and municipal pension funds, unit trusts and financial holding corporations.
<i>Periodicity:</i> Annual
<i>Survey is compulsory or voluntary?:</i> Compulsory according to the Financial Supervision Act of 7 December 1956 no. 1 (with amendments per 1 July 2003)
<i>Main features of methodology:</i> The source represents a census of all relevant units, and no sampling is carried out.
<i>Variables collected:</i> Accounting data (profit and loss accounts and balance sheet figures)
<i>Methods used to allow for missing data:</i> Errors and discrepancies that may occur are checked, standardized and if necessary corrected.
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Both internal and external reconciliation are made according to accounting principles, the latter to make sure that income/expenditure items and balance sheet items that have contra entries on other sector accounts are registered with the same amount in both accounts
<i>Further adjustments made to the data:</i> Errors and inconsistencies are dealt with, both for errors stemming from the transferring of data, when different accounting and estimation principles, when different times of entering data and when incomplete statements are received from the reporting units

10.0.21 **Source 25** contains information on various cultural activities and on various institutions and bodies within the cultural sector. More specifically, information includes participation of various cultural activities, private and public expenditures for cultural purposes, grants for artists, purchase systems, copyrights, information on performing arts, sports and outdoor activities, museums and collections, libraries, film and cinema, radio and TV, music, publishing of books, newspapers and periodicals, National archives services and religious and philosophical communities. Statistics Norway has published cultural statistics issues annually since 1996.

10.1.22 **Source 26** contains economic survey data on supporting services to transport activities according to the **SBS-based source (source 65)**.

10.1.23 **Source 27** contains statistics on all enterprises with concession within electricity production and distribution. It covers electricity supply, water reservoirs, capacity of installed machinery, grid systems and transformer statistics, production and consumption of electric energy, prices of electricity, staff-years, value added, fixed capital formation and economic figures. This source is an **SBS-based source**. The data are collected electronically in corporation with the Norwegian Water Resources and Energy Directorate (NVE).

<i>Name of survey:</i> Electricity statistics (SBS NACE D)
<i>Link to surveys undertaken at the European level:</i> EU regulation 1099/2008
<i>Organization collecting data:</i> Administrative data + Statistics Norway
<i>Reporting units:</i> Enterprises. Split into several categories of utility: industrial generators, production plants, wholesale utilities, retail utilities, integrated utilities, grid companies and other utilities.
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> Available 16 months after the end of the accounting year.
<i>Sampling frame:</i> Not relevant (census on annual basis)
<i>Survey is compulsory or voluntary?</i> Compulsory, acquired under the Statistical Act from 1989.
<i>Main features of survey methodology:</i> Complete accounting returns and extensive additional specifications are obtained from all electricity utilities jointly by Statistics Norway and the Norwegian Water resource and Energy Administration (NVE)
<i>Sample size:</i> Not relevant (complete coverage)

<i>Survey response rate:</i> All enterprises covered
<i>Method used to impute for missing data:</i> Not relevant
<i>Variable used for grossing-up to the population:</i> Not relevant
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> Not relevant
<i>Main variables collected:</i> Gross value of production, consumption in power stations, pump consumption, losses, imports, exports, net consumption (by type and consumer groups), intermediate consumption, value added, gross fixed capital formation, compensation of employees, tax on use of electric power, royalty, commission fees and other public charges
<i>Further adjustments made to the survey data:</i> Electricity production on the Norwegian Continental Shelf is excluded from the statistics

10.1.24 Source 32 contains in particular the Survey of Housing Conditions 2012 (EU-SILC). It includes a detailed description of the dwellings, housing expenditure and environment, as well as information about the household living in the dwellings. The survey presents data of size and standard of the dwelling, of debt, interest expenditure and down payment in different regions and population groups. The sample for the survey consisted of 9 000 persons, including the additional sample for the capital area. General background variables are regional, historical, household structure and resources such as income, wealth, health etc. Other groupings are 11 different types of households and 14 types of houses. Construction year is registered, and so is dwelling ownership status by 7 different items. Since 1996, annual surveys of living conditions, including housing conditions, have been undertaken (without economic data, however).

10.1.25 Source 33 contains data from periodic income sample surveys for various occupation groups in the health sector, such as private medical practitioners (veterinarians also specified), dentists, physiotherapists and psychologists and contains data on output, intermediate consumption, compensation of employees and subsidies.

10.1.26 Source 39 contains annual statistics for enterprises in manufacturing, mining and quarrying (except mining activities related to petroleum). It includes information on number of local KAUs and enterprises, employment, production value, value added, operating income, operating profit, compensation of employees and investments classified by industry division, type of ownership and group, employment group and county. A table on consumption of fuel and electricity is also included. From 1996, these statistics have been adapted to the EU regulation for structural statistics. Still, the local KAU dimension has been retained, since manufacturing statistics are one of the basic foundations for the annual national accounts. Statistics on the local KAUs have also been compiled for some variables for national accounts and other Norwegian users. By all means, this source has since 2002 main revision been replaced by/integrated in the new **SBS-based source (source 66)**.

10.1.27 Source 40 contains annual data on domestic non-scheduled maritime transport of goods as part of **SBS-based source (source 65) statistics**.

10.1.28 Source 41 contains annual data on regular coastal trade for licensed passenger transportation services. Freight transportation services are included when accompanied and combined with passenger transportation services (freight services basically covered by source 41 above). The data are obtained from reports submitted by the individual companies and comprise scheduled services between Norwegian ports. Statistics are also provided on the Express Coastal Liner Bergen-Kirkenes based on reports compiled by the Ministry of Transport and Communications. This source has since 2002 main revision been replaced by/integrated in the new **SBS-based source (source 65)**.

10.1.29 Source 42 contains annual data describing the development of the ocean shipping industry. It presents tables on size, structure and crew of the merchant fleet. Furthermore, there are statistics on vessels in Norwegian foreign-going trade and shipping between Norway and foreign countries and

arrivals of Norwegian vessels at foreign ports. For Norwegian coastal trade, there are tables for regular coastal trade and vessels for hire or reward on own account. This source has become the SBS-based source. The operating enterprises are the reporting unit. In fact, the source consists of two surveys. The standard SBS survey based on the NO formula and in addition Operating survey for vessels in foreign going trade (sample survey). This annual survey is an extension of the standard annual SBS with more information on type of income (type on transportation products), cost elements and also ratios for exports and imports respectively. This can be seen as representing TS (supplementary form) for this industry.

<i>Name of data source:</i> Maritime transport statistics (SBS part of NACE H)
<i>Link to surveys undertaken at the European level:</i> EU regulation on structural business statistics
<i>Organization collecting the data, and purposes for which it is collected:</i> Administrative data + Statistics Norway.
<i>Reporting units:</i> Enterprises belonging to relevant NACE 50 industries. In addition, a separate form is conducted to collect more details on operating income and cost data for Norwegian shipping companies that either own or operate ships..
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> Within 16 months after the end of the accounting year
<i>Sampling frame:</i> Central Register of Establishments and Enterprises (CREE) supported by Norwegian shipping registers (NOR and NIS).
<i>Survey is compulsory or voluntary?</i> Compulsory according to the Statistical Act of 1989
<i>Variables collected:</i> Accounting data, such as operating earnings, operating expenditure and operating result, tonnage data, merchant fleet (size and structure), number of ships and employment. Operating earnings and expenditure by type of chartering and type of vessel. Operating earnings also differentiated by size of vessel.
<i>Methods used to allow for missing data:</i> Total census annually. Missing data are either copied from last year or estimated based on similar forms.
<i>Further adjustments made to the data:</i> Data are registered and revised manually, and with logical machine controls.

10.1.30 Source 43 contains comprehensive and detailed statistics on quarterly basis for the oil and gas activity on the Norwegian Continental Shelf. The survey data include data on accrued investment costs for exploration, field development, fields on stream and onshore activity, also including estimates for investment activities 12 - 18 months ahead. Information on production and prices etc. is also included. Annual data are also provided, including accounting statistics for licensees. This source has become the **SBS-based source**.

<i>Name of data source:</i> Oil and gas activity statistics (SBS NACE 06, 09.1 and 49.5)
<i>Link to surveys undertaken at the European level:</i> EU regulation on structural business statistics (Reg 295/2008 and 1893/2006)
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway is collecting quarterly investment statistics from the operators of the Norwegian continental shelf, and annual statistics from the operators involved at fields in production, terminals and pipeline activities. A comprehensive detailed statistical survey of the oil and gas activity on the Norwegian Continental Shelf is published in quarterly publications.
<i>Reporting units:</i> All licensed Norwegian establishments (operators), their activity-based offshore or on-shore.
<i>Periodicity:</i> Annual and quarterly (gross fixed capital formation on accruals basis)
<i>Availability of results:</i> Annual data within 17 months after the end of the accounting year

<i>Sampling frame:</i> Central Register of Establishments and Enterprises and Register of Norwegian Petroleum Directorate
<i>Survey is compulsory or voluntary?</i> Compulsory according to the Statistical Act of 1989
<i>Sample:</i> Not relevant (census)
<i>Methods used to allow for missing data:</i> Output of natural gas is problematic due to insufficient information on loss in pipelines. Norm prices of crude petroleum are used, average prices from the four largest fields (75 per cent of output), made public by the Ministry of Industry and Energy. Natural gas prices are indirectly calculated from values and quantities.
<i>Variables collected:</i> Output (incomes from production), intermediate consumption (costs of production), employment, wages and salaries, other current costs, taxes on production and electricity production at the fields, etc. Gross fixed capital formation by each individual license, pipeline and terminal the operators are responsible for, structures by production phases (exploration, field development and fields in production).
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Values are recalculated as of prices at the fields. Quantity output is available on monthly basis, published in final version in the annual statistics, also after being scrutinized through commodity balances by product (supply and use).
<i>Further adjustments made to the data:</i> Adjustments are made for border areas with the UK to ensure correct value added and operating surplus figures in the Norwegian statistics.

10.1.31 **Source 45** contains data related to parts of NACE sections 94 to 96 and is since 2002 main revision part of the **SBS-based source (source 65)**.

10.1.32 **Source 47** contains data on research and development (R&D) since 2002 main revision and has been replaced by/integrated in the new **SBS-based source (source 65)**. These statistics provide data on operational and capital expenditures with a breakdown on research institutes, other producers and universities and high schools.

10.1.33 **Source 50** contains information on the motion picture industry in **standard SBS format**.

10.1.34 **Source 51** contains reports on travel agencies and tour operators and has since 2002 main revision been part of the standard **SBS-based source (source 65)**.

10.1.35 **Source 52** contains data from annual reports obtained from the theatres (also including concert houses), the opera house and the museums.

10.1.36 **Source 53** contains data from tramway and suburban transport companies. All existing rail companies in Oslo, Bergen and Trondheim are covered. This source has since 2002 main revision been part of the standard **SBS-based source (source 65)**.

10.1.37 **Source 55** contains data on trade margins of wholesale trade and on trade margins of retail trade. Ad hoc sample surveys were carried out for the first time in wholesale trade for the year 1985 and in retail trade for 1986. A second round was held in the late 1990s (1996 for retail trade and 1998 for wholesale trade) and the latest survey cover **2008**. These statistics provide data on trade margins by branch groups and margin rates by products (commodity groups). Gross margins and commodity flows - including data on suppliers, distribution channels and recipients were examined.

<i>Name of survey:</i> Sample surveys on trade margins by commodity
<i>Link to surveys undertaken at the European level:</i> Partly EEA-relevant (turnover by commodity groups every 5 years)
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway

<i>Reporting units:</i> Local KAUs
<i>Periodicity:</i> Ad hoc periodic (1985 and 1998 for wholesale trade, 1986 and 1996 for retail trade). Latest survey covering the year 2008
<i>Time of availability of results:</i> Results from 2008 survey was partly available early 2011 for use in main revision
<i>Sampling frame:</i> Stratified by branch groups and three different size groups (large, semi-large and small). All branch groups (except wholesaling of crude petroleum and natural gas) were included in the survey
<i>Survey is compulsory or voluntary?:</i> Compulsory according to the Statistical Act of 1989
<i>Main features of survey methodology:</i> All large units were covered as well as a sample of semi-large units, while small units were not covered. Separate forms were used, product groups included
<i>Method used to impute for missing data:</i> No particular information
<i>Variable used for grossing-up to the population:</i> In grossing up, the small units were taken to represent the semi-large units. By the method of estimation used, the distortion from such a representation has been corrected for
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> See above.
<i>Main variables collected:</i> Sales, purchases by branches and product groups, etc. Gross margins defined as the difference between sales and consumption (purchases adjusted for changes in inventories), less taxes on products plus subsidies on products. Sales are excluding VAT while including taxes on products. Purchases are excluding VAT and taxes on products.
<i>Further adjustments made to the survey data:</i> Adjustments made after controls against other statistics and registers. Definition of turnover is the same as in wholesale and retail trade statistics and corresponding short-term statistics (retail trade indices, etc.)

10.1.38 **Source 56** contains annual data on scheduled motorbus transport and has since 2002 main revision been part of the **SBS-based source (source 65)**.

10.1.39 **Source 57** contains various kinds of information related to social work and nursing activities. Annual data are provided on economic assistance, child welfare and children's institutions. Gross expenditure data are particularly useful for national accounts purposes.

10.1.40 **Source 60** contains data from the Business Register essentially confined to employment and turnover data. These are data that rely on surveys, from which results are finalized after a certain time lag, and occasionally reflect a situation 1 - 2 years back. This statistics or source is of less relevance since the introduction of the SBS for most industries.

10.1.41 **Source 61** contains annual statistics of business accounts for hotels and restaurants and has since 2002 main revision been part of the **SBS-based source (source 65) statistics**.

10.1.42 **Source 62** contains statistics for real estate, renting, professional and business activities (i.e., NACE group L, M, N and S). This source has been amended from 1996 when adapted to the EU regulation on structural statistics, which primarily requires statistics at the enterprise level. Statistics on the local KAUs have also been compiled for some variables for national accounts and other Norwegian users. This source has since 2002 main revision been replaced by/integrated in the new **SBS-based source (source 65)**.

10.1.43 **Source 63** contains data on annual basis for health institutions. Particularly useful for national accounts are data on expenditures of health institutions that are covered by the county health plans. Most important terms in the tables include gross current expenses (also corrected for outpatient activity), gross current revenues and counties' gross current expenses corrected for revenues and expenses for guest patients.

10.1.44 From **1 January 2002**, the central government took over responsibility for **Specialist Health Service**. Specialist health service includes: Accounts, somatic care (hospitals), psychiatric health care, substance abuse treatment, ambulance service and specialists with operating agreements with Health Enterprises. The new organizational structure was a Health Enterprise model with 5 Regional Health Enterprises (RHE), being the owners of subsidiary Health Enterprises (HE). This includes a transition from an administrative organization to an enterprise organization. The responsibility for the population of a specific geographical area lies with the RHE the area belongs to. The RHEs have also taken over the operating agreements with private hospitals, institutions and specialist from the counties. The purpose of the specialist service statistics is to provide information on capacity, activity, personnel and economy within the Specialist health services. The statistics cover all general hospitals and other institutions (specialist nursing homes, convalescence and rehabilitation institutions, hospitals and delivery wards), institutions in psychiatric health care for adults and for children and adolescents, ambulance service, operating agreements with private specialists and clinical psychologists and specialized substance abuse institutions. The accounts are structured in a two-axis system, which provides us adequate details for the ICHA-implementation. The system has the same structure as the KOSTRA-system described in the previous section. As the KOSTRA-system, the specialist service statistics gives data classified by Type of service and by Type of expenditure, which enable us to split the cost by product (type of service/function) and by source of financing (type of expenditure). The statistics on type of expenditures provide us with details on:

- Services produced by the institutions
- Services bought from others (private companies, other municipalities or the state)

10.1.45 **Source 65** is based on Council Regulation of 20 December 1996 concerning structural business statistics. See Annex 1 of this Council Regulation for characteristics etc. Table descriptions and templates for **sources 7, 11, 42 and 62** above provide relevant information and should be referred to. For more detailed information, see chapter 3 (output and intermediate consumption), chapter 4 (compensation of employees) and chapter 5 (gross fixed capital formation) of the various NACE groupings involved, particularly within services.

10.1.46 **Source 66** is based on Council Regulation of 20 December 1996 concerning structural business statistics. See Annex 2 of this Council Regulation for characteristics etc. Table descriptions and templates for **sources 27, 39 and 43** above provide relevant information and should be referred to. For more detailed information, see chapter 3 (output and intermediate consumption), chapter 4 (compensation of employees) and chapter 5 (gross fixed capital formation) of the NACE groupings involved.

10.1.47 **Source 67** is based on Council Regulation of 20 December 1996 concerning structural business statistics. See Annex 3 of this Council Regulation for characteristics etc. Table description and template for **source 75** below provides relevant information and should be referred to. For more detailed information, see chapter 3 (output and intermediate consumption), chapter 4 (compensation of employees) and chapter 5 (gross fixed capital formation) of NACE G.

10.1.48 **Source 68** is based on Council Regulation of 20 December 1996 concerning structural business statistics. See Annex 4 of this Council Regulation for characteristics etc. Table description and template for **source 19** above provides relevant information and should be referred to. For more detailed information, see chapter 3 (output and intermediate consumption), chapter 4 (compensation of employees) and chapter 5 (gross fixed capital formation) of NACE F.

10.1.49 **Source 70** covers repair of motor vehicles, household apparatus and commodities for personal use and has since 2002 main revision been part of standard **SBS-based source (source 65) statistics**.

10.1.50 **Source 71** contains data from periodic surveys of the taxi operation industry and has since 2002 main revision been part of standard **SBS-based source (source 65)**.

10.1.51 **Source 75** contains statistics for wholesale and retail trade, repair of motor vehicles, motorcycles and personal and household goods (i.e., NACE sections 45, 46 and 47). This source has been amended from 1995 according to the Structural Business Statistics programme. This source has since 2002 main revision been part of standard **SBS-based source (source 67)**.

10.2 Statistical surveys and other data sources used for the income approach

10.2.1 Main data sources used for **the income approach** are listed in table of **inventory of sources** used for national accounts - **the fourth column** relating to income approach - in alphabetical order. The inventory table is presented above at the start of chapter 10 (see also introductory text there as well).

Comments on individual sources for the income approach

10.2.2 **Source 5** contains accounting statistics based on a survey conducted for self-employed people and their household members. The electronic availability of all tax return forms has made this source a **census** like source.

<i>Name of data source:</i> Accounting statistics of self-employed persons
<i>Link to surveys undertaken at the European level:</i> Not relevant
<i>Organization collecting the data, and purposes for which it is collected:</i> Covers all self-employed persons submitting tax return forms
<i>Reporting units:</i> Self-employed persons and their family members
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> 11 months after the end of the accounting year
<i>Sampling frame:</i> The population is all self-employed persons who operate businesses at their own account and risk and return. The tax return statistics define the population as all persons with entrepreneurial income, entrepreneurial deficits and/or estimated personal income from such business activities, regardless of the size of the entrepreneurial income/loss and the ratio between entrepreneurial income/deficit and other income. The unit of analysis is sole proprietorship (business) and self-employed person. From the income year 2004 the tables include residents age 17 years or older
<i>Survey is compulsory or voluntary?:</i> Not relevant
<i>Main features of survey methodology:</i> The statistics is based on information from ordinary tax assessment. The data is obtained from the tax offices in the form of copies of tax returns, depreciation forms and forms for calculating personal income for self-employed persons. The classification of industries is based on information from the business register. From the income year 2009 self-employed persons with operating income under NOK 50 000 are exempt from reporting income statement.
<i>Response rate:</i> not relevant
<i>Variables collected:</i> Accounting data and tax declarations submitted to the tax authorities
<i>Methods used to allow for missing data:</i> Not relevant
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjustments necessary, data being influenced by tax rules and tax auditing practice.

10.2.3 Source 44 contains accounting data that are part of central government accounts, i.e., reflecting one of the three sub-sectors of central government (the other two being central government's fiscal account and the social security accounts). They consist of government funds, price regulation funds, public service pension funds, central government special accounts, advance and deposits accounts, plus Norwegian Guarantee Institute for Exports, and credits. Advance and deposit accounts may be viewed as a supplement to central government accounts in terms of achieving correct timing and to cover transactions without previous allocation.

10.2.4 Source 49 contains administrative data reported by the *A-melding*. The data source was established 1st January 2015 and is a coordinated digital monthly collection of employee jobs, employees, remuneration for the employees, payroll-taxes, social benefits and taxes paid. The introduction of the reporting system followed legislation (lov om *A-melding*) which put the foundation for the duties of the parties involved.

<i>Name of data source:</i> Register of Jobs, Remuneration, Social benefits and Taxes (<i>A-melding</i>)
<i>Organization collecting the data, and purposes for which it is collected:</i> The institution collecting the data is Etatenes fellesforvaltning. This is a unit owned and controlled by the Norwegian Directorate of Taxation, Statistics Norway and the Norwegian Welfare Administration (NAV). The purpose of the data collection is to help serve the needs of the 3 institutions which are all subject to laws governing their duties.
<i>Reporting units:</i> With a few minor exceptions all companies are obliged to report monthly to the a-melding if total wages and salaries for at least one employee for the actual year exceeds NOK 1000 (97 Euro) . The data is reported for each individual job. The central welfare authority (NAV) reports paid out pensions and other social benefits.
<i>Periodicity:</i> Data are reported monthly (the company is free to report more than once each month). All data are available for Statistics Norway 15 days after the end of the month to be reported. month
<i>Variables collected:</i> All variables reported to the a-melding is stored in Statistics Norway. The number of variables is considerable (several hundreds). The variables cover employee jobs and relevant information such as persons holding the job, features of the jobs like weekly-hours and the remuneration for each job (wages and salaries in kind and contributions to pension/insurance schemes). The reporting companies/employers is identified and information regarding the companies such as NACE classification is included (by linkage to the Business register). The employees are identified by the central population register. Pension benefits and other social benefits paid by the central welfare authorities (NAV) are also included.
<i>Methods used to allow for missing data:</i> Census-type source. Non-response is negligible. The consequence of not reporting is severe for the companies. Non-reporting results that income tax will not be paid, the employees will not earn rights to pension benefits and will not be able to receive social benefits in case of loss of job etc.
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Some items are adjusted to national accounts specifications for proper groupings (such as borderline between in cash and in kind).
<i>Further adjustments made to the data:</i> Controls and revisions of the a-melding data are made in several steps. The reporting unit are always allowed to correct what has been reported earlier months. Due to the fact that the information is used for determining the tax to be paid by the employees/the persons receiving the benefits the information provided ought be correct. The employees are informed on the values reported and are also responsible for their accuracy.

10.2.5 Earlier listed **source 65** represented a common term for all sources that were typically industry-based in the context of compiling estimates for compensation of employees (or wages and salaries) and employment. The common term is applied here in order to avoid repeating once more the

relatively long list of sources that applies in the production approach (for output, intermediate consumption) and in the expenditure approach (for gross fixed capital formation). This source has since 2002 main revision been replaced by/integrated in the new **SBS-based source** (again **source 65**).

10.3 Statistical surveys and other data sources used for the expenditure approach

10.3.1 Main data sources used for **the expenditure approach** are listed in table of **inventory of sources** used for national accounts - **the fifth column** relating to expenditure approach - in alphabetical order. The inventory table is presented at the start of chapter 10 above (see also introductory text there as well).

Comments on individual sources for the expenditure approach

10.3.2 Source 8 represents a common term for all sources that are typically industry-based in the context of compiling estimates for household consumption expenditure of transportation services. The common term is applied here in order to avoid repeating once more the relatively long list of sources that applies in the production approach (for output). This source has since 2002 main revision been replaced by/integrated in the new **SBS-based source (source 65)**.

10.3.3 Source 12 contains accommodation statistics based on monthly reports from each hotel etc. giving the number of guests arrived, guest nights by nationality of the guests, and by purpose of the hotel accommodation and the number of rooms occupied. The statistics cover all hotels and similar establishments, camping sites with a capacity of at least 20 units, holiday dwellings with a capacity of at least 10 bed places, and all members of Hostelling International Norway.

10.3.4 Source 15 contains information on buildings completed and started and buildings under construction as per end of period (monthly, quarterly and annual data). These are **register data**, from computerized register containing information about all ground properties and addresses in Norway. The register specifies various types of buildings, for which there are figures available on numbers and utility floor space in square meters.

<i>Name of data source:</i> Building statistics
<i>Link to surveys undertaken at the European level:</i> EU reg. 1165/98, regarding short term statistics
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway prepares statistics based on reports to the GAB register (G round P roperty, A ddress and B uilding Register). Owner of the register is Ministry of Environment, while the Norwegian Mapping Authority is professionally responsible and the municipalities provide the necessary information. The statistics measure development in building activities for all types of buildings
<i>Reporting units:</i> All ground properties and addresses in Norway, all buildings under construction as per end of period and all buildings that have been built or changed during the period (thus: complete census)
<i>Periodicity:</i> Monthly
<i>Time of availability of results:</i> 6 weeks after end of period
<i>Sampling frame:</i> GAB register (see above)
<i>Variables collected:</i> Type of building, i.e., 20 types of all-year dwellings, 7 types of production building for mining, quarrying and manufacturing, 9 types of office and business building, 5 types of

hotel and restaurant building, building for education services and research (1 type only), 2 types of buildings for health services, 4 types of assembly buildings, 17 types of buildings for agriculture, forestry and fishing and 8 types of other buildings. Furthermore: Site, building work started, buildings completed, and buildings under construction, utility floor space, dwellings, dwelling units and single rooms. Industrial classification is also provided (more uncertain than type of building)
<i>Methods used to allow for missing data:</i> Municipalities are responsible for entering building cases in the GAB register. Time lags occur: average delays about 3 months for buildings completed, 4 months for building permits and 5 months for building started
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Not applicable
<i>Further adjustments made to the data:</i> Each building is checked and revised if necessary, with a set of machine and manual checking and revision procedures to ensure that obvious errors in the register are corrected

10.3.5 Source 18 contains accounting information in a standardized form for **central government**, based on the same principles and definitions as in the national accounts. The basis for the statistics on the central government's income and outlay, assets and liabilities are the accounting statements from the various central government authorities. Central government accounts consist of the central government's fiscal account, other central government accounts and the social security accounts.

<i>Name of data source:</i> Central government accounts
<i>Link to surveys undertaken at the European level:</i> Various EU-regulations (2000 – 2002)
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway is responsible after most data have been transferred from the Ministry of Finance. Purpose is to provide financial statistics for central government, as well as institutional sector accounts for central government in the National Accounts
<i>Reporting units:</i> Most specialized data are obtained from the various Ministries, Norges Bank, the Social Security Fund and some other governmental authorities
<i>Periodicity:</i> Annual and quarterly (revenue and expenditures)
<i>Time of availability of results:</i> Preliminary data 2 months – final data 18 months
<i>Variables collected:</i> Types of transactions (income and outlay items) and financial assets and liabilities, as required by the institutional sector accounts. Information on accounting statements include breakdown on chapter, type, COFOG, NNA-product and activity according to NACE
<i>Methods used to allow for missing data:</i> Not relevant, but information is sometimes less detailed than needed in the accounting framework. Breakdown by NNA-products is a feature for which the text attached to the central government accounts is considered useful in some instances, while the main guidance for the allocation work are explanations to the CPA
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Government accounts in Norway are based on same principles as in the national accounts. Procedures of control and standardization of the individual statements of accounts are made, both in connection to transfer of data and in following normal accounting rules
<i>Further adjustments made to the data:</i> Adjustments are made if the different accounts and accounting principles of the primary statistics deviate from the financial statistics standards. These procedures are followed by internal reconciliation work - internally by sector - and by external reconciliation work which secures that counter items in the accounts of other sectors are registered in the statistics with the same amount in both sets of accounts

10.3.6 Source 20 contains consumer prices in terms of the CPI (Consumer Price Index) covering all private households and their purchase of goods and services for household consumption.

<i>Name of survey:</i> Consumer Price Index
<i>Link to surveys undertaken at the European level:</i> Harmonized Consumer Price Index (HCPI) of various EU-regulations. The latest 119/2013. Also ILO (Convention 160 concerning Labor Statistics)
<i>Organization collecting the data:</i> Statistics Norway
<i>Reporting units:</i> Establishments, municipalities (local government services) or households (rents)
<i>Periodicity:</i> Monthly
<i>Time of availability of results:</i> 10 th of next month (between 1 and 2 weeks after end reference month)
<i>Sampling frame:</i> A sample of about 650 goods and services is selected. In addition, scanner data is used as the only data source for food and beverages together with non-food goods from supermarkets, pharmaceutical goods, fuel and within specific consumption groups in clothing and equipment for sport and open-air recreation. Representative goods and services in the sample are selected based on information from the annual household budget survey and branch information. The sample of goods and services is basically kept constant but is regularly updated when new important products enter the market while outdated products are removed. Prices are collected from a sample of outlets, households and municipalities. The outlets comprise a panel sample where one sixth of the outlets are replaced each year. The sample amounts to about 2 000 firms. The sample of households for the survey of rents amounts to 2 500 tenants. The outlets/firms are selected from Statistics Norway's Business Register in proportion to the firm's turnover i.e., large firms have a bigger probability of being chosen. The selection is made after stratifying the population by industry and region. The probability to be selected is proportional to the size of the turnover. Another sampling methodology is used for sub-surveys directed towards municipalities
<i>Survey is compulsory or voluntary?</i> Compulsory, acquired under the Statistical Act from 1989
<i>Main features of survey methodology:</i> The main part of the prices are collected by means of electronic questionnaires, which are sent to the outlets the 10th of each month, and returned to Statistics Norway the first working day after the 15th. Statistics Norway also receives electronic scanner data from grocery firms, retail pharmacies, sports and clothing dealer's and petrol stations monthly. Car prices and price information on alcoholic beverages are received electronically. Tariffs on electricity are collected from the Internet. Rentals for tenants are collected by means of electronic questionnaires and CATI- Computer Assisted Telephone Interview - directly from households.
<i>Population size:</i> Prices of household consumption expenditure for households located in Norway
<i>Sample size:</i> See sampling frame above
<i>Survey response rate:</i> 95 per cent
<i>Method used to impute for missing data:</i> Missing prices normally imputed by average price change for submitted prices of same commodity in same region (hot deck)
<i>Variable used for grossing-up to the population:</i> See above
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> Not relevant
<i>Main variables collected:</i> Consumer prices, i.e., actual purchasers' prices (given any discounts or sales price)
<i>Further adjustments made to the survey data:</i> Controls are made at the level of representative goods and services, against historical series and other relevant statistics and data (such as PPIs and changes in taxes on products)

10.3.7 Source 21 contains specifications on military expenditures obtained from the Ministry of Defense, to serve as a basis for the allocation of military expenditures for either gross fixed capital formation or intermediate consumption. The regularity of this source has been deteriorated in most recent years but resuming work on this is expected.

<i>Name of data source:</i> Cost survey data for defense activities
<i>Organization collecting the data, and purposes for which it is collected:</i> Ministry of Defense, calculation of improved price index for defense activities in return
<i>Reporting units:</i> All relevant unit specifications recorded by Ministry of Defense

<i>Periodicity:</i> Annual
<i>Variables collected:</i> Military expenditures by user categories (GFCF, intermediate consumption). Obtained once a year for annual final accounts
<i>Methods used to allow for missing data:</i> No information
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Adjusted to ESA95 principles
<i>Further adjustments made to the data:</i> No information

10.3.8 Source 28 contains data on total energy consumption, electricity, crude oil, natural gas, petroleum products, coal and coke, prices and price changes for different energy bearers. In the context of compiling household consumption expenditure estimates, quantity and price data are combined, quantity data obtained from energy accounts. Energy accounts and energy sources balance sheet represent a central part of energy statistics compiled by Statistics Norway. **Energy accounts and energy sources balance sheet** are published annually with the purpose to cover the **total supply and consumption** of energy in Norway. Figures for production, transformation, imports, exports and consumption in households and various industries are presented for each energy source. It covers the consumption and supply of all energy commodities in Norway (oil, electricity, gas, coal, coke, district heating, biofuels etc.). Energy sources that are of very little importance for the Norwegian energy supply, for instance solar energy and geothermal energy, are not included. On the use side, the statistics cover energy consumption in all sectors and industries (energy industries, manufacturing industries, construction, transport, private and public services, primary industries, households) etc., in total about 130 different industries and sectors. The sources are available basic statistics, partly from Statistics Norway's own statistics, partly from other institutions. Relatively few figures are collected only for the purpose of being used in the energy accounts and the energy sources balance sheet. The statistics have been published annually since 1976 and the statistics are used by various public and private institutions working on energy related issues and analyses. In Statistics Norway, the Division for Environmental Statistics, the Research Department and the Division for National Accounts are important users, the latter in connexion with NOREEA (environmental accounts) and the balancing of supply and use in the SUT. The work in the Oslo city group for energy statistics has given renewed interest in the energy accounts as a source for national accounts compilation of energy use.

10.3.9 Source 29 contains time series and statistics highlighting the main features and development of Norwegian external trade in commodities. It also contains tables on a more detailed level on areas of trade of special interest.

<i>Name of data source:</i> External trade in goods statistics
<i>Link to surveys undertaken at the European level:</i> Various EU-regulations. The latest 1106/2012
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway mainly obtains information from the Norwegian customs authorities' system for electronic data exchange with the enterprises (TVINN). Purpose is to give information about the commodity flows between Norway and other countries
<i>Reporting units:</i> Administrative data from Norwegian customs authorities (customs declarations)
<i>Periodicity:</i> Monthly
<i>Time of availability of results:</i> 6 – 7 weeks after end of month
<i>Sampling frame:</i> Customs Authorities' register of declarations
<i>Variables collected:</i> Exports of goods (merchandise exported directly from free circulation and through customs warehouses) and imports of goods (commodities cleared on arrival and commodities placed in warehouses) - values and quantities
<i>Methods used to allow for missing data:</i> Total census, except consignments of value less than 200 NOK. Statistics Norway also collects data on imports and exports outside the Norwegian customs

territory, i.e., on ships and mobile oil platforms, cross-border transfer of electric current, and exports of crude oil and natural gas
<i>Adjustments made for conceptual differences from national accounts concepts:</i> For coverage several adjustments are made, e.g., for consignments under NOK 200, imports directly to Norwegian continental shelf, bunkers purchased by Norwegian ships and airplanes abroad
<i>Further adjustments made to the data:</i> The data have been subject to various controls in the TVINN system and from co-operation with Statistics Norway, including probability controls. Monthly figures are revised until release of final annual figures (for traditional goods, usually small revisions only)

10.3.10 Source 30 contains reported data to Norges Bank (Central Bank of Norway) from foreign exchange banks concerning payments between residents and non-residents, i.e., own payments and payments on behalf of their customers. This source was **replaced from 2005** by a **new data collection system for BoP** statistics (see source 74). For some minor BoP items however the levels from this source have been kept but developed subsequently using other alternative sources. One example is households' transfers to abroad.

<i>Name of data source:</i> Foreign exchange statistics (ITRS = International Transactions Reporting System) – discontinued as from 2005
<i>Organization collecting the data, and purposes for which it is collected:</i> Norges Bank (Central Bank of Norway). Purpose of the reporting is to collect information on payments between residents and non-residents in both NOK and foreign currency.
<i>Reporting units:</i> All foreign exchange banks in Norway and a cut-off sample of residents (enterprises) keeping bank accounts abroad
<i>Periodicity:</i> Monthly
<i>Variables collected:</i> All gross transactions together with the stock value of the corresponding financial asset or liability. Payments are classified in 30 - 40 payment types, and Norges Bank undertakes a further breakdown into about 300 items (including sector and industry breakdown)
<i>Methods used to allow for missing data:</i> ITRS is a closed system with self-balancing mechanisms, i.e., credit equals debit, in principle no statistical errors and omissions will occur.
<i>Adjustments made for conceptual differences from national accounts concepts:</i> For the NA and the BoP purposes, ITRS often is replaced with data from other sources, e.g., for most parts of exports and imports. Then the difference between ITRS and the alternative source is calculated and recorded as a trade credit or as unallocated financial transactions and statistical error on the financial account depending on the nature of the transaction.
<i>Further adjustments made to the data:</i> Internal controls are made as the ITRS in practice does not fulfill its self-balancing mechanisms but records a balance, i.e., a net credit or a debit.

10.3.11 Source 31 contains data on average consumption expenditure in private households, resulting from household consumer surveys of consumption expenditure carried out by Statistics Norway. The survey was annual in the period 1974-2009. It was not conducted surveys in 2010 and 2011. After this it will be conducted larger periodic surveys. The first was carried out in 2012 and the next is planned for 2022.

<i>Name of survey:</i> Household budget (consumer) surveys
<i>Link to surveys undertaken at the European level:</i> Not EEA relevant (no EU regulation)
<i>Organization collecting the data:</i> Statistics Norway
<i>Reporting units:</i> Households
<i>Periodicity:</i> Annual until 2009 – from 2012 periodically
<i>Time of availability of results:</i> 2012 data released 17 December 2013

<i>Sampling frame:</i> Samples of households selected in three stages: sample areas (grouped in 10 regions, type of municipality etc.), individual sample areas (three smaller areas) and finally households living in the addresses at the time of interview. Institutional households are not included
<i>Survey is compulsory or voluntary?:</i> Voluntary survey
<i>Main features of survey methodology:</i> Consumption expenses are registered by means of detailed accounting (account books for 14 days) and interviews (introductory and concluding) using the CAPI technique. Persons from 0 to 84 years are selected, the households of which constitute the sample
<i>Population size:</i> All private households in the country
<i>Survey response rate:</i> Around 50 per cent. Main cause of non-response: "refuse to answer".
<i>Method used to impute for missing data:</i> During the interviews, machine routines are followed to avoid errors or misregistrations. In processing the accounts books, coding and registration controls are used. Corrections are made for non-response
<i>Variable used for grossing-up to the population:</i> Average data are published
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> No particular information
<i>Main variables collected:</i> total consumption expenditure, classification of expenditure following COICOP, and more detailed groups of goods and services, ownership of durable goods, income (from tax assessment registers), expenses for dwelling, light and fuel. Data by socio-economic status, region, area of residence
<i>Further adjustments made to the survey data:</i> Household groups with a high non-response rate are weighted relatively more in estimating average figures

10.3.12 Source 34 contains price statistics that relate to **building costs and prices of new dwellings**. The index of building costs is inferior as it misses the mark-up element and changes in productivity. Another drawback is that this cost index is a Laspeyres index with a cost structure from 1986-1988 (from some 30 building projects). The price index now used for all five types of dwellings is a hedonic type index. It is considered quite relevant for detached houses, houses with two dwelling units, row-houses and terraced houses, plus for holiday homes, although it may prove less representative for multi-dwelling houses. The index is a weighted index, as it is two different types of information to be collected about the input factors, the percentage of each component (weights) and the prices. The weights are compiled every tenth year through cost studies of representative buildings. The prices are measured monthly.

10.3.13 Source 37 is a system for electronic data reporting and publishing information on most of the municipal and county municipal activities, including economy, schools, health, culture, the environment, social services, public housing, technical services and transport and communication. KOSTRA is an abbreviation for "Municipality-State-Reporting" (KOMMUNEStatRAPPORTERING). The KOSTRA-project started as a pilot in 1995, after which it was decided that all local governments should report according to the new system. The number of municipalities increased gradually over the years, and the first full scale reporting took place in March 2002, and in operating phase from July 2002. KOSTRA focuses on two purposes: (1) better information about the municipalities, both for the central and local governments, and (2) more efficient reporting. The latter means that all data reporting from the municipalities are electronic, by use of electronic forms or file extracts and implies that the same data should be collected only once, even if it is used for many purposes. Better information means a more coherent data collection which makes it possible to combine data from many sources, e.g., data on accounts with data on services and personnel. Focus has also been on comparability between municipalities, and to make benchmarking possible as a part of the management process. Timeliness is vital, collecting information in February and first figures published in March, when electronic tests only check the reliability of data. Later in June, revised figures are published. A number of fixed indicators on the municipalities' priorities, productivity and their needs are published, structured to enable comparisons, also with average for the comparable group of municipalities, the region or the country. The publishing also includes detailed data that enables the users to construct their own indicators and tables, and data may be presented on maps. The accounts are classified by

KOSTRA-function and by Type of expenditure, which enable us to split the cost by product (type of service/function) and by source of financing (type of expenditure). To be more specific about the data, the KOSTRA-functions gives costs related to a number of relevant issues, that is:

- Maternal and child health; family planning and counselling
- Dental care
- Basic medical and diagnostic services
- Activation of elderly and disabled
- Nursing and care, help in institutions
- Nursing and care, help at home

The Type of expenditure gives sufficient data to separate between:

- Services produced by the municipalities
- Services bought from others (private companies, other municipalities or the state)
- Transfers
- Consumption of fixed capital

10.3.14 Source 38 contains accounting information in a standardized form for **local government**, based on the same principles and definitions as in the national accounts. The basis for the statistics on the local government's income and outlay, assets and liabilities are the accounting statements from each of the 428 municipalities and 19 counties in Norway (2015), and from joint (county) municipal administration activities.

<i>Name of data source:</i> Local government accounts
<i>Link to surveys undertaken at the European level:</i> Various EU regulations – e.g., 1221/2002
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway, while accounting rules or regulations are set by the Ministry of Labor and Municipal Affairs. Purpose is to provide financial statistics for local government, as well as institutional sector accounts for local government in the National Accounts
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> Preliminary figures publication about 10 weeks after end of year - audited figures publication is about 24 weeks after end of year
<i>Variables collected:</i> Types of transactions (income and outlay items) and financial assets and liabilities, as required by the institutional sector accounts. Information on accounting statements include breakdown on chapter, type, COFOG, NNA-product and activity according to NACE
<i>Methods used to allow for missing data:</i> Not relevant, but information is less detailed for local government than for central government. Breakdown by NNA-products is a new feature, for which the text attached to the local government accounts was considered useful in some instances, while the main guidance for the allocation work were explanations to the CPA
<i>Adjustments made for conceptual differences from national accounts concepts:</i> Government accounts in Norway are based on same principles as in the national accounts. Procedures of control and standardization of the individual statements of accounts are made, both in connection to transfer of data and in following normal accounting rules
<i>Further adjustments made to the data:</i> Adjustments are made if the different accounts and accounting principles of the primary statistics deviate from the financial statistics standards. These procedures are followed by internal reconciliation work - internally by sector - and by external reconciliation work which secures that counter items in the accounts of other sectors are registered in the statistics with the same amount in both sets of accounts

10.3.15 **Source 46** contains relevant quantity information for items that consist of goods heavily taxed by government. These include five groups of beverages and tobacco (other non-alcoholic beverages, beer, wines, spirits and liqueurs and tobacco) and for which quantity data in terms of liters and prices are available.

10.3.16 **Source 48** contains data from the Central Register of Motor Vehicles and figures available in the publication "Car and road statistics" from the Directorate of Roads. Data are specified by type of vehicles and broad user groups and refer to vehicles registered at the end of the year. Figures are in fact cross-classified by some 10 vehicle types and 9 user groups.

10.3.17 **Source 54** contains data on retail trade used extensively for the compilation of consumption expenditure estimates on household goods. It used to contain information on the number of establishments, employment and sales by industry group, location, size and legal organization of the establishments. From 1995, the annual statistics have been adapted to the EU regulation on structural statistics, which primarily requires statistics at the enterprise level. In fact, this source is part of wholesale and retail statistics (source 75) and - from 2002 revision onwards - **SBS module on distributive trades (source 67)**.

10.3.18 **Source 58** represents a common term for all sources that are typically industry-based in the context of compiling estimates for household consumption expenditure of social services and health services.

10.3.19 **Source 64** contains quantity data in terms of new registrations of motor vehicles on monthly basis.

10.3.20 **Source 69** contains price data on housing rental market to be used both in the NA and the Consumer Price Index (CPI). The purpose of the survey is to measure rent levels in Norway grouped into different segments of the rental market. The rental survey was first carried out in 2005 as an external commission and was based on the need for more detailed and improved rental statistics. The statistics was further established as official statistics in 2006. In 2012 the survey is expanded with more detailed figures.

<i>Name of survey:</i> Rental market survey
<i>Link to surveys undertaken at the European level:</i> Link to Harmonized Consumer Price Index (HCPI)
<i>Reporting units:</i> Households, i.e., owner-occupiers, tenants and part owners in housing co-operatives
<i>Periodicity:</i> Annual
<i>Time of availability of results:</i> The annual statistics is published around a quarter after the current period
<i>Sampling frame:</i> As registers of rental units and of tenants are incomplete, a potential population of rental units/tenants is therefore established by connecting different registers. To remove homeowners, persons/addresses from the Central Population Register (DSF) are connected to the Ground Property, Address and Building Register which is called SSB-Matrikkelen. In order to remove homeowners in cooperative dwellings and institutions, information from the Statistics Norway's Business Register is also connected
<i>Survey is compulsory or voluntary?:</i> Voluntary
<i>Main features of survey methodology:</i> A statistical method where a dependent variable (here: rent) is explained by a set of explanatory variables (here: dwelling characteristics). Based on actual observations in the main survey a mathematic function gives a connection between the rent and its characteristics. For owner-occupiers, procedure followed is that of tenants (tenants' total market), stratified by type of dwelling, building year and location (municipalities). Rentals for tenants are collected by means of CATI - Computer Assisted Telephone Interview - directly from households on

monthly basis. Rentals for part owners in housing co-operatives are collected from register data of 5 housing co-operatives (total of 75 000 units) on monthly basis
<i>Population size:</i> The population is defined as all rental units inhabited by private tenants in Norway
<i>Sample size:</i> The size of the gross sample in the fourth quarter of 2013 is 37 000 persons/addresses including an overrepresentation of the largest municipalities of about 6 700 persons/addresses. The size of the net sample (the share of responded questionnaires) is about 9 500. Of the net sample, there are about 7 500 tenants. Each year a new sample is selected without overlapping previous samples
<i>Survey response rate:</i> None response is high
<i>Method used to impute for missing data:</i> Questionnaires with missing values for rents and inconsistent answers are deleted Total and partial non-responses are not imputed.
<i>Variable used for grossing-up to the population:</i> Consumption in household consumer surveys (for the tenants part)
<i>Sample coverage, as % in terms of variable used for grossing-up:</i> See other information
<i>Main variables collected:</i> Rents - The actual rent of the rental object. Monthly rents are selected. No adjustments are made for rents that include electricity and/or heating except for the predicted monthly rents (table 09897), where the markup for electricity and or heating are excluded. Rent allowance - Economic housing benefit administered by the State and the municipalities, provided to cover all or part of rental charges. Number of rooms - The rooms that are used in the calculations are the number of bedrooms and living rooms excluding kitchens, bathrooms and storage rooms. Rooms beyond 8 are omitted
<i>Further adjustments made to the survey data:</i> A statistical method where a dependent variable (here: rent) is explained by a set of explanatory variables (here: dwelling characteristics). Based on actual observations in the main survey a mathematic function gives a connection between the rent and its characteristics

10.3.21 Source 73 contains tourist and travel statistics. Statistics on travel deal with economy and employment data in this field, also operation of accommodation services, other travel services (passenger data) and data from holiday surveys. Questionnaires on hotel statistics, camping statistics and holiday dwellings statistics are used to collect these data.

10.3.22 Source 74 became the new source to replace foreign exchange statistics (ITRS data of source 31) in 2005. It is named after the project UT, while the source as such is data collection as described in the template below.

<i>Name of data source:</i> UT-statistics: Reporting of balance of payments data from non-financial enterprises
<i>Link to surveys undertaken at the European level:</i> Link to EU regulation on BoP statistics
<i>Organization collecting the data, and purposes for which it is collected:</i> Statistics Norway has been collecting the data since 2004. The survey covers imports and exports of services and foreign assets and liabilities among other things. The data will among others be used for producing macroeconomic statistics, i.e., the NA and the BoP
<i>Reporting units:</i> Non-financial enterprises, i.e., the legal unit excluding any affiliates abroad.
<i>Periodicity:</i> Quarterly. A small sample report also financial and balance sheet data on a monthly basis
<i>Time of availability of results:</i> About 10 weeks after end of quarter
<i>Sampling frame:</i> The population in this survey is built on information from Financial Census from 2003, the foreign payment statistics from the Central bank of Norway from 2004 (the last production year) and Central Register of Establishments and Enterprises. The population is kept up to date by the use of different administrative register, such as the Register of Cross border Transactions and Currency Exchange, information through contact with the largest reporting enterprises and information through media
<i>Survey is compulsory or voluntary?</i> Compulsory, acquired under the Statistical Act from 1989

<p><i>Main features of survey methodology:</i> Generally, all Norwegian enterprises that have transactions or assets and liabilities towards foreign legal persons should be included in the balance of payments statistics. Therefore, the survey is based on statistical methods and draw a sample of the largest enterprises that are to report statistics of balance of payments data quarterly and annual. In addition, a sample of small and medium size enterprises must also submit data on an annual basis</p>
<p><i>Methods used to allow for missing data:</i> Financial and balance sheet data are copied from last year or period. Missing data on exports and imports of services are not estimated or copied from last period. The sample figures on trade in services are grossed up by a statistical method</p>
<p><i>Variables collected:</i> The variables collected to the balance of payments statistics can be divided into the following: data on trade in services, income, capital transactions and balance sheet items. Monthly: Liabilities (a few items). Quarterly: Data on trade in services: exports and imports of services. Income, capital transactions and balance sheet data: comprise other transactions and assets and liabilities towards foreign countries, including various specified assets and liabilities items, financial incomes and costs, gains and losses in connection with assets and liabilities. The data should mainly be found in the companies' accounting systems. Geographical breakdown is collected as part of the reporting of the 4th quarter</p>
<p><i>Adjustments made for conceptual differences from national accounts concepts:</i> In general, the balance of payments data are based upon principles and definitions from the BoP manual. The data of trade in services are required to be classified in accordance with the EU's product standard "Classification of Products by Activity" (CPA). Adjustment1: Some items in Merchandise trade are redefined as services based on a link between HS- and CPA-classification. Adjustment2: Import transportation services are estimated from Merchandise trade statistics. Also, some other adjustments are made</p>
<p><i>Further adjustments made to data:</i> Data are revised manually with logical automatic controls</p>

10.4 Statistical surveys and other data sources used for the transition from GDP to GNI

10.4.1 Main data sources used for **the transition from GDP to GNI** are listed in table of **inventory of sources** used for national accounts - **the last column** relating to the given transition - in alphabetical order. The inventory table is presented at the start of chapter 10 above (see also introductory text there as well).

Comments on sources for the transition from GDP to GNI

10.4.2 **Source 30 - Foreign exchange statistics (ITRS data)** – has been the most important source used for the transition from GDP to GNI until 2004. It has already been described in section 10.3 above in relation to exports and imports of services. From 2005, it has been replaced by **source 74**, i.e., by **direct statistical surveys of enterprises** (quarterly and annual, to some extent also monthly).

10.4.3 **Source 59** refers to source for estimating reinvested earnings in Norway (debit). Reinvested earnings are estimated based on information collected as part of the surveys on **direct investment**. From 2005 direct investment data are based on the **new survey reporting system** of Statistics Norway for balance of payments purposes (**UT**).

10.4.4 **Source 72** is referring to a separate survey in direct investments abroad initiated by Statistics Norway in 2007 and used for estimating reinvested earnings credit. It also comprises information from

annual accounts submitted to the Register of Company Accounts which is used as a source to detect and collect data on Norwegian direct investment abroad.

10.4.5 Source 74– UT-statistics: Reporting of balance of payments data from non-financial enterprises - is now the most important source used for the transition from GDP to GNI. It has already been described in section 10.3 above in relation to exports and imports of services.