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Standardtegn i tabeller	Symbols in tables	Symbol
Tall kan ikke forekomme	Category not applicable	.
Oppgave mangler	Data not available	..
Oppgave mangler foreløpig	Data not yet available	...
Tall kan ikke offentliggjøres	Not for publication	:
Null	Nil	-
Mindre enn 0,5 av den brukte enheten	Less than 0.5 of unit employed	0
Mindre enn 0,05 av den brukte enheten	Less than 0.05 of unit employed	0,0
Foreløpige tall	Provisional or preliminary figure	*
Brudd i den loddrette serien	Break in the homogeneity of a vertical series	—
Brudd i den vannrette serien	Break in the homogeneity of a horizontal series	I
Rettet siden forrige utgave	Revised since the previous issue	r

Abstract

Taran Fæhn and Leo A. Grünfeld

Commercial Policy, Trade and Competition in the Norwegian Service Industries

This report evaluates the relevance of classifying all service industries as sheltered, as done in several applied macroeconomic models. For this purpose, a substantial part of the paper is devoted to establish a conceptual framework for the study of service industries, the particular market structures they are placed in and the political conditions imposed on them. On the basis of the theoretical discussion and the empirical fact that Norwegian services are more and more traded internationally, we conclude that several types of services should be reclassified as tradables. Moreover, our findings suggest that service industries have strong elements of monopolistic competition between differentiated products, fixed costs, as well as governmental regulations and protection. These characteristics are essential to account for, when modelling service activities.

The large appendix discusses the implementation of our conclusions into an input-output price model, the ERA (Effective Rates of Assistance) model of Statistics Norway. As compared to the old version of this model, we suggest a new division between exposed and sheltered industries, and provide a framework for quantifying and modelling regulation and protection of service industries. The ERA model is, however, found too simple to satisfactorily account for all aspects of imperfect competition

Contents

1. Introduction

Most disaggregated computable general economic models split industries into two categories; those that are exposed to foreign competitors and those that are naturally sheltered. This is also true for the most frequently used CGE models for Norway, see e.g. Haaland et al. (1988), Haaland and Norman (1992), Mathiesen (1992) and Holmøy, Nordén and Strøm (1994)[1]. The separation is theoretically motivated by their different price determination. While prices of non-tradables depend exclusively on domestic factors, prices of tradables are influenced by the behaviour of foreigners. In traditional Hekscher-Ohlin-Samuelson (HOS)-models, domestic prices of tradables are completely determined by world markets.

Empirically, the classification in most Norwegian models still resemble the division made in the inflation model PRIM of the late sixties. As documented in Aukrust (1971), industries that had a relatively constant profits to wage costs ratio were defined as *sheltered*. This choice was based on the idea that changes in costs except wages among sheltered industries, were shifted on to prices in order to maintain normal profits. In contrast, strong empirical fluctuation in the profit rates relative to wages were interpreted as a consequence of externally determined prices. Industries with such profit rate performance were defined as exposed. Most service industries, along with production of electricity, were categorised as naturally sheltered. And this pattern has been maintained until today in most macroeconomic models of the Norwegian economy[2].

In contrast to this persistency, the registered share of services in trade has increased dramatically during the last 25 years, due to technological progress, changing preferences and strong efforts to liberalise and

integrate the European economies. The share of services in total imports and exports increased from about 10 percent in 1969 to about 30 percent in 19943. In addition, there is an inherent downward bias in the statistical material, as trade in services is difficult to register. Further, appearance of trade is not a necessary condition for prices being affected by the pricing behaviour of foreign competitors. Foreign direct investments (FDI) represent another manifestation. Also in absence of FDIs and trade, *threat* of foreign competition may discipline domestic pricing behaviour.

The classification method of Aukrust hinges on the validity of the traditional HOS model as an explanation for the pricing behaviour. New models of industrial organisation and international trade may provide alternative explanations for variability in profit rates and/or prices. There are also other shortcomings of the Aukrust method. First, it ignores the distinction between naturally and politically sheltered industries. Second, the level of aggregation of the observations veil important variation within an industry, a problem that is not properly taken care of in the PRIM model. Observations, as well as new theoretical achievements clearly illuminate the progressive need for a critical evaluation of the way international competition is modelled.

This report provides recent data on trade in services[4] and maps the political conditions under which trade and competition take place. These observations are linked to a theoretical framework, which accounts for the characteristic features of services. These features have implications for how services are traded, for the industrial organisations of their markets, as well as for the design of commercial policies directed towards them. The analysis concludes that the understanding of service industries as sheltered, is ripe for revision. A comprehensive appendix sketches how the empirical and principle features of the service markets could be implemented into a disaggregated input-output price

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[1] In two of the most frequently applied macro econometric models of the Norwegian economy, MODAG and KVARTS, the partition is not that marked, as pricing behaviour in each industry is tested with respect to domestic, as well as to foreign, external factors.

[2] Also in applied models where the impact of foreign pricing behaviour on domestic service prices is ex ante allowed for, econometric testing tends to rule out this correlation or render it small.

[3] Statistical Yearbook (1996).

[4] We have not considered trade statistics for the public service sector, as its activities are hard to measure and model.

model, which assumes constant unit costs and perfect competition. This model is chosen at the current stage, due to its simplicity. Parts of the application have interest for model implementation in general, but the presented model is not complex enough to do justice to all the aspects of service trade and competition.

2. The distinction between goods and services

Two characteristics of services are often emphasised in order to distinguish services from goods:

1) Production and consumption of a service must appear simultaneously.
Communication services are good examples here. Once you call someone on the phone, the telephone company must instantaneously respond by producing the requested line connection. Unless production and consumption is performed simultaneously, the service cannot be provided. Alternatively, one may claim that such services are non-storable. However, a considerable amount of services, like R&D, business consulting, literature and film and video services are easily stored and do not demand the outlined production-consumption simultaneity. Hence, the simultaneity condition is not a necessary condition for an activity to be characterised as a service.

2) Services have an intangible or non-material nature.
Services cannot be measured in traditional volume or metric terms. In his seminal paper «On goods and services», Hill (1977) defined services on the basis of the transformation of goods and agents. He claimed that a service is supplied by one economic agent as a trans-formation of an already existing good or consumer. Here, the production of a movie may serve as a good example. In physical terms, a movie is only a trans-formation of an existing, yet empty roll of film. But the demand for a movie is first of all linked to the value of entertainment which again can be interpreted as a qualitative transformation of a consumer or economic agent in terms of his way of apprehending the world. The same story could be told about other entertainment activities as well as hotel- and restaurant services, cosmetic-, health- and fitness related services, etc.

Both the simultaneity condition and the intangible nature of services may require that suppliers and consumers are physically located at the same place. This is especially so if the provision of a service rests on the participation of both producers and consumers, as is the case in education, most kinds of personnel trans-portation, hair dressing, restaurant services, retail trade, etc. And furthermore, as we will discuss later, the physical appearance of service suppliers also often generates a competitive advantage, since the quality and reliability of a service is more easily corrected and controlled by the consumer when it is possible to communicate directly with the actual supplier. This way, physical proximity is regarded as a quality enhancement.

Furthermore, due to the intangible nature, the simultaneity condition and the question of geographic proximity, services are easily differentiable. The same service provided in Oslo and Tokyo are still different due to location. Moreover, even taxi services provided along the same route may differ dramatically due to the way it is driven, the way the driver acts and the quality of the car. Hence, the numerous possibilities for differentiation enable the producers to engage in a monopolistically competitive market.

According to Tirole (1988), the quality or properties of a good cannot always be identified before it is purchased or consumed. Tirole labels such goods as *experience goods* (quality can only be ascertained after consumption) or *credence goods* (it is not possible to identify the level of quality). Apparently, most services are experience goods, both because production and consumption is performed simultaneously and because services often are highly differentiated. Consequently, consumers face a problem of asymmetric information and become the uninformed principal in a *moral hazard* situation. Since the consumer is financially responsible regardless of quality, and can not distinguish reduced producer efforts from accidental or random reductions in quality, the service producer has less incentive to provide a high quality product. However, if the service producer operates in a market where *repeated* purchases are common, the consumer can monitor the service quality over time and demand reduced prices at later stages. Alternatively, to avoid some of the information disadvantages, consumers can co-operate by generating systems of *reputation* regarding service providers. Hence, reputation becomes one of the most important factors of competition. As Sapir (1991) points out, service producers often become multinational to be able to follow consumers wherever they have an reputational advantage.

3. International trade in services

If one cannot provide services unless producers and consumers are located at the same place, is it then possible to trade services internationally? And moreover, is it possible to trade something internationally that has no physical substance? Obviously, in terms of the concept of traditional trade in goods and factors, service trade is not possible. However, not all provision of services depend on physical proximity since some services can either be transported electronically or linked to / encapsulated into a physical substance (disc, document, film, etc.). Even though the service *per se* is not internationally mobile, the producers and consumers can travel abroad to engage in international service trade, as e.g. tourism. According to Sapir et al. (1993), international trade in services can be performed in 4 different ways:

Type 1) Services are traded electronically or physically encapsulated between two locations.

Type 2) Consumers travel abroad to purchase services. This kind of purchaser mobility is associated to e.g. health services, air and railroad transport, education and tourism.

Type 3) Producers travel abroad to provide services. Such activities are often observed within the construction and engineering industries and in the business consulting market, where the permanent presence of a supplier is not regarded as necessary.

Type 4) Producers establish a branch abroad to provide services on a continuos basis. To the extent that foreign direct investments are believed to impact the pricing behaviour of domestic firms, this category of foreign competition will be considered as international trade. Providers of banking and insurance services, transport and distribution services, as well as retail trade services, frequently prefer to establish offices in the country of interest.

4. Figures on trade in services

4.1. The statistical sources

Since services are not included in the statistics of external trade, Statistics Norway applies a wide range of sources to generate National Accounts (NA) data on trade in services[5]. The primary source is the foreign exchange statistics, which specifies the purpose of every larger currency transaction in Norway on a quite disaggregated level. Maritime transport statistics and oil and gas activity statistics are used to generate figures for services in these industries. The tourist statistics is applied in combination with foreign exchange statistics to estimate Norwegian consumption abroad and foreigners consumption in Norway. Furthermore, air transport statistics helps us to generate figures on air traffic trade, and trade figures on telephone and post services are partly based on accounting figures provided by the public monopolies in telecommunication and postal services. It is important to notice, that in accordance with international standards, only a fraction of the foreign direct investments in Norway (type 4 trade) are categorised as foreign establishments in NA. In general, foreign subsidiaries and branches are registred as Norwegian enterprises and their activity is thus not registred as foreign competition in the trade statistics. The symmetric case applies to Norwegian direct investments abroad.

4.2. Some aggregate observations

The 1992 Current Account (CA) and NA figures for imports and exports of services are presented in Table 1. Out of total exports and imports registered in the CA in 1992, services represented 28 and 34 percent, respectively. A closer look at the CA shows that international shipping activities dominate the trade figures. The industry is highly internationalised and the majority of the vessels are registered outside of Norway or in the Norwegian international ship register. Services related to travelling and tourism are also prominent in the trade figures. So are services encompassed by the residual category *other services*.

Table 1.The Current Account and Trade in Sheltered Services (NA figures) 1992, million NOK

	Imports	Exports
The Current Account		
Goods	166387	219687
Services	85650	83470
Gross figures for shipping	26599	42906
Gross figures for oil drilling	1522	1667
Other oil related services	6867	669
Pipeline services	-	1529
Travel services	24126	12262
Other foreigners in Norway/ Other Norwegians abroad	1221	647
Other services	25316	23789
Total	252037	303157
The National Account		
Trade in sheltered services	18286	20142
Construction	109	457
Wholesale and retail trade	965	1059
Domestic transport services	3303	6597
Road transport etc.	83	648
Air transport	797	2153
Railroad transport	322	421
Domestic sea transport	327	1964
Post and telecommunication	1774	1411
Finance and insurance services	4181	3544
Other private services	9728	8485
Dwelling services	0	0
Trade in sheltered activities as		
percent of total service trade	21.3	24.1
percent of total trade	7.3	6.6

Most services are not specified in the CA, but sort under the residual category *other services*. The NA may provide us with more disaggregate trade figures. The so-called *sheltered services* in the NA approximately correspond to *other services* in the CA[6]. As mentioned earlier, these service industries are also traditionally represented as naturally sheltered in most Norwegian macroeconomic models. Summing up over these industries, their exports and imports in 1992 represented 6.6 and 7.3 percent, respectively, of total registered trade in the CA.

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[5] A documentation is found in Fløttum (1980) and in a later unpublished and updated version of the same manuscript.

[6] It is important to notice that due to a recent revision of the NA figures, the disaggregate NA figures in Table 1 does not correspond perfectly with the more aggregate CA numbers, which are unrevised.

The figures from the CA show that total import and total export of services almost balanced in 1992. While the large Norwegian shipping fleet generated a considerable trade surplus, the extensive oil activity in the North sea contributed considerably in the other direction. So did travelling services. Norwegians seem to travel relatively much, and imports of travelling services were twice as large as exports. Trade in *other services* is rather balanced. By looking at its sub-categories by means of the NA, one can observe that imports and exports of domestic transport services, finance and insurance services and other private services constitute the dominant part of trade in this category.

4.3. Trade at a more disaggregate level

The NA provides figures on the so-called *sheltered services* at an even finer level of aggregation. In Table 2, production and trade figures for these finest service groups are listed for the years 1992, 1993 and 1994, provided some trade is registered. The figures are commented on below, under headings referring to the more aggregate *sheltered service* categories of the NA (see Table 1). Emphasis is put on trying to identify the type of trade performed - according to the typography in Chapter 3. At this most disaggregate NA level, such a categorisation appears to be meaningful, as the characteristics of the services within each group are relatively homogenous. Be aware that for the industries characterised by competition through foreign investments in Norway or Norwegian direct investments abroad (type 4 trade), the import and export figures underestimate the amount of trade. The type and the amount of trade performed is of course not only dependant on the natural attributes of the particular services. Commercial policy and trade barriers have traditionally regulated most service activities and can explain much of the trade patterns revealed in Table 2. We refer to Section 6.5 below, where a detailed presentation of the policy regimes is given.

Tourism is registred as foreigners' consumption in Norway, and included in the aggregate export figures. NA does, however, not provide disaggregate figures on these consumption activities. Nevertheless, based on the NA tourist accounts documented by Trude Nygård (1996), we have been able to present estimates of foreigners' consumption on the most disaggregated NA level (See the column labelled *Additional consumption* in Table 2). Unfortunately, there exist no such dis-aggregated estimates for Norwegian tourists' consump-tion abroad, hence there is no corresponding column that represents such import activities in Table 2.

4.3.1. Construction services

According to Table 2, most of the value of trade in construction services was related to exports of road and airport construction and to a lesser extent of

building construction. Services like craftsmanship, plumbing and electrical installation require physical proximity, implying that exports must take the form of producers travelling abroad for a limited period (type 3 trade). A significant part of the construction services can also be encapsulated and sent abroad, like the products provided by architects and engineers. In Norway, construction activities are strongly dominated by domestic producers, mainly due to the advantage of being represented at the very location. As outlined in Section 6.5, trade is little hampered by political regulations.

4.3.2. Wholesale and retail trade

Exports and imports of wholesale and retail trade services are only registered in the NA, whenever there is an international payment due to provisions or commissions in this industry. For instance, a Norwegian agent representing a foreign firm in Norway will export her services for a certain provision. This way, all such trade is performed between parties located in different countries and sorts under type 1 trade. Such international payments are strongly linked to foreign direct investments (type 4 trade), another important source of foreign competition, not reflected in the figures. There is little reason to believe that trade were significantly hampered by political trade barriers.

4.3.3. Transport services

Domestic transport services encompasses the sub-groups *land transport, air transport, railroad transport, domestic sea transport* and *post & telecommunication*. Further disaggregated in Table 2. In 1992, trade was registered in 28 categories of the very finest NA level, including everything from taxi services to satellite transfers, as shown in Table 2.

Within land transport, export of cargo transport and forwarding services dominates, both characterised by producers travelling abroad (type 3 trade). Trade barriers have been gradually removed, but were nevertheless highly prevalent in 1994. Passenger transport in the form of type 3 trade (producer mobility) is not registered in the years 1992 to 1994. This is first of all explained by heavy trade regulations. probably While some export of passenger transport exists in the form of foreigners' consumption (type 2 export), the symmetric import is unfortunately not registered in the figures. There is, however, reason to believe that a more detailed specification of *foreigners' consumption in Norway* would reveal that imports in the form of type 2 also existed.

Most of the traded air transport services are related to passenger flights. Export of these services occurs whenever foreigners located in their home country

purchase a ticket from a Norwegian airline or SAS. In addition, tourist consumption by foreigners is also registered, hence, trade in these services are characterised both by type 2 and 3. Apparently, the air transport industry was one of the most open service industries in Norway during the period from 1992 to 1994, when measured in terms of trade relative to gross production, and the industry is becoming increasingly exposed to foreign competitors.

Passenger transport also dominates the railroad services. Export is registered through purchased tickets from abroad and through consumption by foreign tourists, both implying travelling by consumers - i.e. type 2 export. Import is only registered when Norwegians purchase tickets at home for travels abroad, but there is reason to believe that import also occur in the form of Norwegians' consumption abroad. While type 2 trade is not significantly regulated, type 3 trade is almost non-existing, partly due to protections.

Table 2. Production and Trade in Services (statistics on the most disaggregated National Account level)- Million NOK

Service Group	1992				1993				1994			
	Gross Production	Import	Export	Additional export[1]	Gross Production	Import	Export	Additional export[1]	Gross Production	Import	Export	Additional export[1]
Construction	-	-	-	-	-	-	-	-	-	-	-	...
452110 Building construction	24311	26	113	-	22226	90	61	-	27126	48	40	...
452300 Road and airport construction	6474	83	305	-	7667	61	117	-	7997	64	475	...
452500 Other construction	5760	0	39	-	11726	0	8	-	12577	0	60	...
Wholesale and retail trade	-	-	-	-	-	-	-	-	-	-	-	...
510900 Provisions & commisions	2977	965	1059	-	2431	1193	1122	-	2641	1398	1147	...
Air transportation	-	-	-	-	-	-	-	-	-	-	-	...
621010 Passenger flights	8776	797	1928	200	9396	1310	1165	268	9941	1096	1590	...
621022 Cargo flights	537	0	225	-	743	0	291	-	710	0	277	...
622030 Foreign flights w/ man	-	-		-	522	233	278	-	796	370	338	...
632310 Air services	-	-	-	-	1652	0	76	-	1790	0	68	...
Domestic sea transportation	-	-	-	-	-	-	-	-	-	-	-	...
611011 Short distance traffic	626	-	-	70	-	-	-	74	-	-	-	...
611012 Long distance traffic	261	-	-	126	-	-	-	149	-	-	-	...
611028 Car ferry services	827	-	-	56	-	-	-	59	-	-	-	...
631110 Loading activities	1497	0	132	-	2135	0	143	-	2327	0	174	...
632211 Port authorities	546	0	165	-	630	0	163	-	672	0	197	...
632215 Other sea services	2206	0	1323	-	1915	0	1344	-	1162	0	1037	...
634011 Ship brooking	1884	327	344	-	2204	497	508	-	2615	406	622	...
Land transportation etc.	-	-	-	-	-	-	-	-	-	-	-	...
602123 City bus transport	3430	-	-	72	-	-	-	78	-	-	-	...
602130 Intercity bus transport	459	-	-	31	-	-	-	35	-	-	-	...
602210 Taxi and limo services	2896	-	-	94	-	-	-	94	-	-	-	...
602310 Bus & car services	1111	5	12	-	1233	5	8	-	1363	9	50	...
602410 Cargo & land transport	1213	0	268	-	1049	0	227	-	1127	0	307	...
631210 Storage	554	0	55	-	560	0	61	-	610	0	73	...
632110 Railroad services	0	65	0	-	-	-		-	-	-		...
634012 Forwarding services	400	0	309	-	442	-	326	-	1121	0	998	...
634020 Other transport services	313	13	4	-	388	11	6	-	349	14	1	...
Railroad transportation	-	-	-	-	-	-	-	-	-	-	-	...
601010 Railroad passenger transport	1384	322	249	-	1456	184	205	256	1625	149	152	...
601021 Railroad cargo transport	1050	0	172	-	996	0	123	-	1026	0	179	...
602110 Local railroad transport	477	-	-	12	-	-	-	12	-	-	-	...
602124 Subways and tramcars	464	-	-	14	-	-	-	-	-	-	-	...
632110 Railroad services	0	65	-	-	-	-	-	-	-	102	-	...

[1] Additional export is export through foreigners' consumption in Norway. Statistics on the corresponding import through Norwegians' consumption abroad are not available.

Table 2. Continued

Service Group		1992			1993				1994			
		Gross Production	Import	Export	Additional export[1]	Gross Production	Import	Export	Additional export[1]	Gross Production	Import	Export	Additional export[1]
Post and telecommunication		-	-	-	-	-	-	-	-	-	-	-	...
641115	International transactions	299	150	299	-	336	174	336	-	289	141	289	...
642011	Telephone services	10934	1446	588	-	10715	1590	646	-	10877	858	446	...
642014	Telex og telegraph	110	146	32	-	97	161	37	-	70	85	24	...
642016	Electronic transferes	918	16	8	-	1515	18	9	-	1786	12	1	...
642023	Satelite transferes	845	0	307	-	1046	0	338	-	1085	0	251	...
642025	Other telecom. services	930	16	177	-	1395	-	195	-	1355	12	133	...
Banking and insurance		-	-	-	-	-	-	-	-	-	-	-	...
651212	Banking	6303	266	118	-	6849	382	92		6940	119	96	...
652212	Other credit services	1348	230	119	-	1568	299	165	-	1717	344	211	...
660110	Insurance services	-	-	-	-	3414	3	9	-	2397	2	25	...
660319	Damage insurance services	4169	3684	3296	-	3677	3994	3553	-	5198	3943	3131	...
Other private services		-	-	-	-	-	-	-	-	-	-	-	...
551000	Hotel services	5980	-	-	2240	-	-	-	2499	-	-	-	...
552000	Other accomodation services	821	-	-	373	-	-	-	423	-	-	-	...
553000	Restaurant services	12548	-	-	2340	-	-	-	2538	-	-	-	...
554000	Other restaurant services	676	-	-	97	-	-	-	98	-	-	-	...
555000	Cantina & catering	3277	0	193	-	2978	0	224	-	3007	0	266	...
702012	Hous rent, businesses	15546	132	18	-	17889	190	34	-	18906	199	46	...
711010	Car rentals	332	-	-	76	-	-	-	88	-	-	-	...
712210	Ship and boat rentals	914	0	677	-	756	0	615	-	717	0	581	...
713411	Mashinery rents	1694	452	323	-	1685	867	417	-	1991	860	140	...
713412	Oilrig leasing	1113	0	846	-	1379	327	1331	-	1331	249	1330	...
722010	Computer services	-	-	-	-	-	743	124	-	0	829	107	...
722020	Software consulting	3920	587	212	-	4295	686	311	-	4831	744	447	...
731000	R&D, natural sciences	2601	547	386	-	2475	506	487	-	2517	570	617	...
741110	Legal services	2518	424	229	-	2525	468	263	-	2461	603	338	...
741200	Accounting services	-	-	-	-	4807	26	2	-	5061	13	7	...
741400	Corporate consulting etc.	3426	255	265	-	2851	328	94	-	2543	468	302	...
742011	Tecnical drawings	-	-	-	-	-	14	1	-	0	8	1	...
742020	Tecnical consulting	4383	781	481	-	3943	940	471	-	4107	1231	724	...
742040	Other technical services	10896	0	138	-	12241	0	241	-	14116	0	188	...
744010	Commersials & ads	7193	192	154	-	8264	190	206	-	9365	369	308	...
748110	Fotography services	0	47	15	-	-	45	7	-	0	31	7	...
748400	Other corporate services	2592	4082	2685	-	2845	3821	3064	-	3809	3302	2357	...
748410	Patent & licence lease	0	1142	757	-	-	1888	891	-	0	2104	819	...
921110	Films	0	15	1	-	-	17	1	-	0	18	0	...
921120	Video casetts	0	80	9	-	69	142	20	-	79	143	34	...
921210	Film & videodistribution	36	99	56	-	-	-	-	-	-	-	-	...
922002	TV-advertising services	1233	3	4	-	-	-	-	-	-	-	-	...
923110	Art & antiques	2058	95	74	-	-	-	-	-	-	-	-	...
923122	Entertain & theatre	1927	40	11	-	-	-	-	-	-	-	-	...
923300	Amusement parks & circus	739	-	-	198	-	-	-	215	-	-	-	...
925000	Library and museum services	474	-	-	28	-	-	-	37	-	-	-	...
926000	Tourist related sports	380	-	-	148	-	-	-	148	-	-	-	...
930400	Other personal services	240	12	22	-	-	-	-	-	-	-	-	...

[1] Additional export is export through foreigners' consumption in Norway. Statistics on the corresponding import through Norwegians' consumption abroad are not available.

Due to the extensive international shipping activity, the amount of trade in ship brooking services is quite significant. Data on trade in post and telecommunication services show that trade in regular telephone services represented more than half of the industry trade and that there was a significant deficit in the trade balance.

4.3.4. Banking and insurance services
According to the national accounting figures, trade in banking and insurance services was primarily linked to the international market for damage insurance. With respect to banking, international loan and *savings* activities dominate the external trade. Nilsen and Sandal (1996) used the statistics on foreign assets and liabilities to map the amount of foreign competition on the Norwegian financial markets and found that out of the total loan activity in 1994/1995, approximately 30 percent was directed towards foreign banks and financial institutions. The authors found considerably less foreign competition on the market for savings, amounting to 7-10 percent during the last years. This trade consist primarily of electronically transferred services (Type 1 trade). In addition, the number of foreign subsidiaries and branches established in Norway is increasing (see Section 6.5.) as market access has been liberalised. this type of trade (type 4) not registered in the Table 2 figures.

4.3.5. Other private services
Other private services is the largest category with respect to trade. The bulk of activities named *other corporate services* represents a dominating part of the industry trade, however, this is by all means a residual sub-category that basically contains all corporate services except for corporate, technical, legal and software consulting. The figures in Table 2 show that trade in all these services - which is usually performed as type 1 and 3 trade - was relatively large. Trade in hotel and restaurant services, which are almost exclusively type 2 trade, is uniquely linked to foreigners' consumption in Norway. Hence, we have no estimates regarding imports of such services. However, if we assume that the amount of imports relative to exports of restaurant and hotel services is proportional to the amount of imports relative to exports of travelling services in the CA, reported in Table 1, these categories will apparently also play a dominating role in the trade of other private services. Finally, it is necessary to be aware of the considerable amount of rental and leasing activities that sort under this service industry. International leasing of patents and licenses represent the most traded activity and does not require that agents travel to meet, as the service can be performed through contractual arrangements that are electronically intermediated (i.e. type 1 trade).

4.3.6. Dwelling services
There was not registered any trade in dwelling services in 1992. The category mostly contains house letting services, but real estate administration and mediation is also included here. The NA tourist accounts have until now not been able to produce reliable data on these activities. Producers in these markets have traditionally been strongly dependent on local knowledge and reputation, hence, the industry has been regarded as almost completely sheltered from foreign competition. In the recent years, however, the environment for such services have grown more international. Trade must obviously rest on type 3 and 4 trade.

4.4. A discussion on the tradability of services
The services listed in Table 2 represent all disaggregate groups subject to registered trade in 1992. Their gross production constituted 28 percent of total sheltered service gross production registered in NA. The remaining disaggregate service groups, which are excluded from Table 2, had no registered trade. In Table 3, the corresponding percentage proportions *within* each NA sheltered service group i reported[7].

Table 3. Proportion of industry activity engaged in trade (1992 figures)

Construction	41 %	Domestic sea transport	82 %
Retail trade	3 %	Post and telecom.	55 %
Road transport	36 %	Bank and insurance serv.	24 %
Air transport	80 %	Other private services	40 %
Railroad transport	86 %	Dwelling services	0 %

The figures reveal that most of the service industries categorised as *naturally sheltered* in the NA, as well as in most macroeconomic models of Norway, are quite heterogeneous with respect to occurrence of registered trade. It appears to be quite unsatisfactory to treat all the aggregates as non-tradables. Trade is registered in the majority of the transport and communication service activities, as well as in substantial parts of the construction and other private service activities.

As pointed out, two important types of trade, Norwegians' purchases abroad (type 2 trade) and most of the foreign direct investments (type 4 trade), are not included in the figures. With a more complete registration, the tradable part of the service industries would increase. In addition, services can of course be tradable without actually being traded. Chapter 5 below discusses the relevance of *threat* of competition, while Chapter 6 is devoted to political barriers to entry and trade. Thus, Table 3 undoubtedly presents a rather conservative picture of the tradability of services.

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[7] The proportions result from adding together gross production for all disaggregate activities where trade is registered and calculating their percentage share of sector gross production.

5. Natural barriers to entry and trade in service markets

Typically, the competitive structures in service markets deviate considerably from perfect competition, largely due to the particular characteristics of services. Barriers to entry and trade restrict domestic as well as international competition. The present section presents *natural* barriers to trade in the service markets, while the next section studies hindrances that are *political* in nature.

Natural barriers to market entry may take on two forms. They may prevent (potential) competition from *new establishers* in a market, or they may hinder *transaction of services* from one location to a market in another location. We will denote the two groups *establishment* and *transaction* barriers, respectively.

Natural establishment barriers
Establishment barriers result in some kind of imperfectly competitive industrial organisation. Sapir (1991) stresses two characteristic features of services that may lead to imperfect competition. First, the scope for differentiating between services both in quality and location is likely to develop monopolistic competition, where producers of different varieties of a service obtain some market power (see e.g. Flam and Helpman (1987) for a formal discussion of such competition). Second, fixed costs is present in production, e.g. conditioned on infrastructure as for railroad and telecommunication services. These may give rise to scale economies and/or scope economies, which will limit the competition due to natural monopoly power. However, the theory of *contestable markets*, developed by Baumol et al. (1988), points out that fixed costs need not provide cost advantages to market incumbents. As long as investments in real estate, equipment etc. can be resold, entrants represent a potential threat and markets are contestable so that average cost pricing is ensured. *Sunk costs* will however represent an entry barrier. Such costs are often associated with the intangible nature of services, which makes investments in reputation and confidence essential. In addition, even tangible capital in the service industries - such as premises and transport equipment - may give rise to market power, even if it has multiple uses and may be rented. That is so, if incumbents are able to promptly and flexibly change the prices or quality of their supply, in a way that turn entrance unattractive. Such *strategic barriers* to entry were e.g. found by Baumol and Willig (1986) in the case of airlines.

Sapir (1991) concludes by dividing services into three main classes with respect to natural market structure. The first structure is related to differentiation in consumption, while the last two are consequences of increasing returns to scale and incontestability. Sapir argues that the majority falls into (a):
a) monopolistic competition
   Examples: business and trade, professional services, tourism, consulting, entertainment.
b) natural monopolies
   Examples: Telecommunications, Railroads, Water supply, Distribution of electricity
c) natural oligopolies
   Examples: Financial services, Airlines

Natural transaction barriers
Transaction barriers are factors that make it costly to transfer a service from the supplier to the consumer, either by moving the service, the producer or the consumer. We characterise technological and cultural transaction costs as natural transaction barriers. Cultural transaction barriers refer to factors affecting the interaction and communication between producers and consumers, like language, customs and tradition.

Natural trade barriers
Establishment barriers or transaction barriers that hinder competition from foreigners may, in line with the definition of trade in section 3.2, be denoted *trade barriers*. Natural barriers that hinder *transaction* from a foreign enterprise to a domestic consumer, either by reducing the mobility of the producer, the consumer or the (encapsulated) service are the most common kind of trade barriers. Natural *establishment* barriers may however also prevent trade. This mainly applies to international competition from foreign direct investments, which is included in our trade concept. In order to regard foreign direct investments as foreign

competition, there should be some kind of sunk costs
inherent in the capital or entrepreneurship of the
foreign establisher, that bring a particularly efficient
input or technology into the market. A foreign investor
using only domestic technology and inputs[8], is not
really interesting to distinguish from domestic
entrants[9].

All kinds of natural trade barriers mentioned may be
prohibitive, i.e. they involve costs of establishing
and/or transacting that exceed the difference between
the price realised on the domestic market in absence of
trade and the lowest possible price of an equal foreign
service. An industry producing such non-tradable
services is characterised as *naturally sheltered*. In total
absence of foreign competition (trade), markets may
still be domestically competitive. As concluded above,
establishment barriers are however common in markets
for non-traded services[10].

To sum up, natural barriers to competition mainly fall
into the classification presented in Table 4 below.
Domestic competition as well as trade in the form of
foreign direct investments are predominantly hindered
by natural establishment barriers like scale economies
or product heterogeneity. Other kinds of foreign
competition are usually subject to natural transaction
barriers (technological or cultural in character).

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[8] or inputs and technology that equally easy could be achieved by
domestic producers

[9] Another kind of establishment barrier hindering trade may occur if
a domestic firm possess market power in a global sense. Thus
establishments in *any* country is hindered.

[10] *Transaction* costs within a country may also be of some
significance.

6. Political barriers to entry and trade in service markets

6.1. Government regulations vs. protection

Policy instruments directed towards service markets are to a large extent analogous to those applied to manufacturing industries, such as taxes, subsidies and protection. The particularities of the service markets have, however, given rise to other types of regulative arrangements like various obligations, prohibitions and surveillance measures imposed on market participants and entrants. We reserve the concept *regulations* to political instruments *other than* taxes, subsidies and trade regulations, which affect the structure, prices and quantity produced in a market. By also excluding trade regulating measures, *regulations* will exclusively affect domestic competition in sheltered markets[11], see Table 4. If regulative measures serve to protect domestic firms from foreign competition, they will be defined as *protection* or political trade barriers (see below).

Protection or political barriers to trade can be defined as all government measures that have the effect of increasing the domestic price above the price of a potential foreign competitor (included natural establishment and transaction costs). In line with the delimitation of natural trade barriers, *protection* usually takes on the form of a politically imposed transaction costs. Establishment regulation may also be of significance, especially in case of (potential) competition from foreign establishers in the home market. If a protection measure prohibits all potential trade, or if the measure is formulated in terms of quantity restrictions, the service producer is characterised as *politically sheltered*.

Measures designed to regulate domestic markets may also function as political barriers to international trade. This is so if they have the effect of discriminating against foreign producers, i.e. foreigners who are able to supply domestic markets at lower prices are ruled out. In our framework, these measures are defined as protection, even if the regulation also exclude potential domestic producers (possibly with even lower prices than the foreigners). Typically, previous regulations imposed by a national government in markets for non-

tradable services have gradually turned to become protection, as the natural barriers to trade have diminished in pace with the technological development.

6.2. Rationales for regulations and protection

The rationales for regulating a service market are often related to the particularities of services, which may result in several characteristic market failures in unregulated markets. Other motives are rooted in concern of welfare in a wider sense. Influence of particular interest groups is also an important factor. Below we list some typical welfare arguments in more detail (see e.g. Noll 1989):

Failure of competition. In incontestable service markets natural monopolies and oligopolies might evolve, giving rise to market power abuse. Fixed costs are prevalent in several of the heavy infrastructure-dependant service industries (telecommunication, railroads), as well as in industries heavily relying on reputation (research, consulting, education).
Destructive competition is another kind of competition failure especially relevant for the service sector. In markets with differentiated products, there exists an inherent information problem. In case of relatively few agents, strong price competition may thus deteriorate the quality of the products. Frequent bankruptcies and thus uncertain deliveries can also be interpreted as a quality reduction.

Asymmetric information. Even if the conditions for destructive competition is not present, asymmetric information related to the intangible and differentiated nature of services represents a market failure potential. This also applies to the monopolistically competitive service markets. Information on quality is costly and often unobtainable in advance of consumption and may thus create moral hazard and adverse selection problems.

Externalities. Positive externalities may be an argument for promoting certain kinds of service production. Research and development as well as education and training are traditional examples. Communication services get a higher quality the more widespread is

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[11] This applies to both naturally and politically sheltered markets.

Table 4

| | Domestic competition | Foreign competition (trade) | |
		Foreign direct investment	Other foreign competition
Natural barriers	Establishment barriers	Establishment barriers	Transaction barriers
Political Barriers	Regulations	Protection	Protection

their network. Regulations may also be used to ensure branch confidence, as adverse selection may cause negative externalities to the whole branch. Let the yet unregulated internet services serve as an example.

Public goods. Many services are public goods that cannot be provided in socially desired quantities, unless regulated or produced publicly. Obvious examples are police and defence services, which are typically provided by the government. Arguments to regulate provision of certain services in respect to morality (religious activities, entertainment, press etc.), national identity (cultural activities), security, independence etc., are also based on certain aspects of the services having a public good character.

Distribution. In order to attain distributional objectives, concession rights may e.g. be attached with certain requirements concerning coverage of geographical or social segments of the economy (e.g. air traffic and health care). Alternatively, the government may choose to produce basic services on its own, to ensure sufficient justice (education, health and social care, cultural activities).

Merit goods. Merit goods are goods which are not chosen by the consumers in sufficient quantities from the viewpoint of the government. For paternalistic reasons, regulations may be introduced in order to provide (and compel to consume) certain amounts of merit goods. Examples are compulsory basic education or obligatory security tests of vehicles.

Other macroeconomic purposes. As for industries in general, industrial policies towards service production may be motivated by other macroeconomic policy aims, like stabilisation or employment.

6.3. Common regulation measures

Concession requirements provide the government with control over the market structure as well as the identity or special characteristics of the agents. Several of the above mentioned motives may underlie such an intervention; prevention of destructive competition is one frequently used argument in e.g. the airline, shipping, trucking and banking markets. Specified conditions are usually attached to the concession rights, concerning characteristics of the service products, market coverage, ownership structure, etc. Examples are air lines required to cover specified

geographical segments of a market, or medical institutes restricted to certain fields of activity.

Price control is a usual intervention in monopolistic or oligopolistic markets, to avoid abuse of market power. Due to the problem of detecting true average costs, the regulation is often formulated in terms of the *development* rather than the *level* of prices, for instance in accordance with some price index. Alternatively, firms may be subject to price surveillance, in which case the threat of potential intervention is to have a controlling effect.

Occupational licensing and certification is designed to assure less asymmetry in information between consumers and producers. This restricts the potential for moral hazard and adverse selection, and reduces reputational externalities within an occupational group. Licensing and certification is often required to provide services e.g. as doctors, lawyers, real estate agents and accountants.

Governmental procurement policies that favour certain suppliers may serve to regulate the structure of the market, provided the government is a significant consumer.

Regulations of advertising and marketing are first of all provided through general acts of law, applying to all economic activity. Due to the asymmetric information problem in service markets, they may be of special importance to services. Some services are subject to particular advertising or marketing rules, specifically formulated in order to increase the informational value, e.g. the obligation to publish the *effective interest rate* of loans.

General Acts regulating economic activity, for example the process of entering and exiting a market, are intended to stabilise the markets and thus restrict destructive competition. Depending on the complexity of the rules, they may increase sunk costs, and thus increase entry barriers.

Governmental provision may in principle provide full control of the supply side of the market. Supply by local or central governments is often rationalised by arguments of severe and complex deviation between the socially preferred outcome and market outcomes.

6.4. Common protection measures

Protection measures against foreign competition in services do to some extent resemble trade barriers applied to importable goods. Compared to goods, however, tariffs are less adequate, though applied to certain encapsulated services like movies and computer software. Non-tariff barriers (NTBs) of various kinds are much more prevalent.

Below we list common policy measures that restrain international competition. According to the mentioned types of potential foreign competition, NTBs may represent hindrances related to the four types of trade: 1) the mobility of services, 2) the mobility of recipients, 3) the mobility of suppliers or 4) possibilities for foreign establishments. Finally, some measures may in general restrict competition.

Mobility of services (type 1 trade) has become technologically feasible for many services. Nevertheless, political trade restrictions are present. Procurement practice (primarily by central or local governments) which favours local suppliers, either by requiring fixed local shares or by accepting price gaps within certain limits. Also, quality or qualification standards may exclude foreign competitors. Restrictions on data mobility across borders or on loans/deposits in foreign financial institutions are other examples.

Mobility of recipients (type 2 trade) include mobility of persons as well as objects. Migration and visa regulations control such movement across borders. Insurance refunding is critical in case of medical services, while access to repairing services abroad may be complicated by certification requirements (on cars, machinery etc.).

Mobility of suppliers or foreign establishments (type 3 and 4 trade) may be reduced by rules affecting factor mobility or costs/availability of domestic factors. Capital mobility may be restricted by *inter alia* concession requirements, stock share restrictions or restrictions on international transfers of surpluses. Labour mobility is contingent upon working permits, as well as specific requirements concerning licensing and qualifications. Other inputs may also be restricted, e.g. data mobility across borders or access to infrastructure networks in the host country. Discriminatory tax/subsidy policies by the domestic government may favour national suppliers[12].

General constraints on competition are rules or practices which in principle may restrain all the above mentioned mobility aspects. Acts restricting activities of advertising and marketing may work to favour incumbent firms, thus also protecting against imports. Strict rules on currency exchange may hinder all kinds of service transfer. Finally, there may exist bilateral arrangements that work to rule out the most efficient provision of imported services.

6.5. Regulation and protection of the Norwegian service industries

6.5.1. Construction services[13]

Supply of construction services has not been regulated in Norway, except that formal qualifications are required for certain services. Building regulations, technical standards on building material, and technical requirements preconditioning credit subsidies in housing, have been potential obstacles to entry, in particular for foreign companies. So has the procurement practice of the public sector, though no formal restrictions have existed. As foreign competition requires mobility of supply or establishment, restrictive rules on use of foreign labour and foreign ownership have inhibited imports of construction services. The Nordic market for labour has, however, been open.

The EEA treaty requires that central and local governments, public service institutions, and activities with exclusive concession rights, practice open tender procedures in their procurement of construction works, provided the value of the works amounts to more than 5 mill. ECU. The tender is to be announced in a domestic official publication (*Norsk utlysningsblad*), as well as in the *Official Journal of the European Communities* and the database *Tenders Electronic Daily*. The information required in the announcement is specified. The result of the tender evaluation is also to be announced. Appealing procedures are established.

Within the EEA, qualification diplomas are mutually recognised, thereby a former technical trade barrier is removed. As supply of materials usually constitutes an integrated part of the bids, also trade barriers on intermediates have represented a disadvantage for foreign constructors. With the EEA treaty, minimum standards on building materials are harmonised. In addition, the competition rules forbid market sharing by European cement producers, a collusion which has previously effectively prohibited trade in cement products.

No restrictions on labour mobility remain within EEA. By undertaking a job in another country, one are however subject to the county's legislation concerning working conditions and wages.

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[12] Also differences in subsidy levels among competitors of different nationalities, would function as trade barriers, to the extent that subsidy differences are reflected in prices. In HOS models, this possibility is ruled out.

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[13] Sources: ECON (1993), European Free Trade Association (1994), St.prp. nr. 100 (1991-92), and St.prp. nr. 65 (1993-94).

In association with the Uruguay negotiations, parallel plurilateral negotiations took place on government procurement practices. The Norwegian offer goes no further than the commitments in the EEA Agreement, but more nations are involved. USA, Canada, Japan, Hong Kong, Korea, and Israel have entered bilateral agreements with Norway, in addition to EU. The agreements came into force by 1. of January 1996.

6.5.2. Wholesale and retail trade[14]
The wholesale and retail trade sector is strongly affected by particular national characteristics, such as geographical distance and population density, two variables that make Norway a different case compared to central European countries. During the last 10 years, several parts of the distribution system has been strongly liberalised and restructured. The most important change is probably the restructuring of the grocery trade sector. The establishment of few, but large, food store chains has contributed to large reductions in food prices.

The EEA treaty opens for free competition among wholesale and retail trade firms from the rest of Europe. However, the increasing vertical market power of large Norwegian trading companies works as an obstacle to new entrants in the trading system, facing limited possibilities for efficient supply and support services. The treaty has also contributed to a more liberalised drug store system, where medical drugs equipment is presently distributed by several companies. Drug stores are increasingly encouraged to compete on prices and goods selection, although authorisation is needed to provide medical distribution services. The distribution of wine is also liberalised, as imports and wholesale trade is privatised and an increasing number of state owned wine stores are established. During the coming months, a series of important cases regarding the existing wine sales monopoly, will be tested in the EEA court. If the saying goes against the Norwegian government, it is likely that also sales of wine and liquor will be privatised and open for international competition.

Finally, the book store sector has been offered selective measures to maintain the high number of stores located in the districts. The measures include fixed prices and limited ability to sell books and paper goods outside the book stores. Lately, the market participants have found reason to cancel these regulations, and the publishing market could now become significantly deregulated.

6.5.3. Transport and communication services

Air transport[15]
In 1994, Norway joined EU's third aviation package through the EEA membership, which is designed to liberalise the European market for air transport. The package or treaty has been gradually implemented and was fully established on April 1. 1997. As a member of the treaty, Norwegian authorities can no longer grant flight and landing licences, since this has become an EU matter. The package allows all EU commuter airline to operate on any international route within the EU. On domestic routes with less than 30 000 seats per year, the government may regulate the market in order to sustain airline services or avoid unhealthy competition. Airlines are allowed to set prices freely, but the authorities may regulate the number of airport destinations in accordance with airport capacity due to safety concerns. The treaty does not solve third country questions, and the Norwegian government is still practising heavy licensing regulations on routes destined for airports outside the EU. One example is the airline Braathen, which is not allowed to carry pass-|engers to the Baltic countries where SAS is the only licence holder. Also, the EU has not found a permanent way to resolve the question of government aid, which has been offered through the EU system in several cases after 1994, e.g. to Air France, Iberia and Sabena. As predicted by e.g. Norman and Strandenes (1994), the liberalisation has brought forward significant price cuts of up to 20 percent on the most popular routs. In addition, new low-price-low-service airliners from abroad are planning to open new links between Norway and large European cities, cutting the previous prices in half. Free price setting has also contributed to price hikes on the less popular routes e.g. in Northern Norway, where air fares are now significantly more expensive compared to some years earlier.

Sea transport[16]
90 percent of the Norwegian fleet (including Norwegian ships under flag of convenience) is engaged in overseas trade. International shipping is subject to fairly free access, regardless of place of registration. Norway has two ship registers. The Norwegian Ordinary Register (NOR) encompasses ships servicing the Norwegian coast and continental shelf. In order to attain registration, at least 60% of the capital must be Norwegian, and the majority of the members of the board must be Norwegian nationals. The ship-owning company must be headquartered in Norway. In 1987 the Norwegian International Ship Register (NIS) was established, to increase competitiveness of Norwegian registered ships in overseas trade. Conditions for

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[14] Sources: European Free Trade Association (1994).

[15] Sources: European Free Trade Association (1994), Norman and Strandenes (1994), Træen (1994) and World Trade Organisation (1996).
[16] Sources: St.meld. nr. 32 (1995-96), St.prp. nr. 65 (1993-94), St.meld. nr. 28 (1995-96) and World Trade Organisation (1996).

registration in NIS are less restrictive; foreign ships may enter as long as the owner company has headquarters or representatives in Norway. NIS ships are excluded from internal coastal traffic.

Some protective restrictions still exist within international liner trade (i.e. regular freight traffic between two or more ports), where the nations involved enjoy preferences. Most countries restrict access to internal routes. Monopolised rights and admittance to price collaboration are common regulatory means and subsidies are widespread.

Norway practices open market access to domestic freight transport. (Only NIS ships are excluded.) Passenger transport is mostly regulated by concession rules. Considerations have traditionally been taken to protect incumbents. Førsund (1991) applied Data Envelopment Analysis to measure the efficiency among providers of domestic ferry services. He found a high degree of inefficiency, that might arise from the extensive use of government regulation. New rules in force from 1994 open for tender procedures in allocation of routes. Also, subsidies are to a less extent given as deficiency contribution, and more as unrestrained grants, to encourage efficient management. Price and market sharing collaboration is illegal, but some exemptions are granted by the Norwegian competition authorities, *Konkurransetilsynet*, in order to maintain liner services on particular routes.

The International Maritime Organisation, IMO, provides international legislation on security and environmental issues. International co-operation is formalised within the frameworks of OECD, EEA and WTO. The EEA agreement implies Norwegian participation in the common shipping policy of EU, with exception from the common access rules to coastal freight transport. Neither market access, subsidy policy, nor regulatory practice were significantly affected by the implementation of EEA. In the Uruguay round negotiations, free liner transport and equal access to auxiliary services in the ports were important issues of concern. No conclusions were however reached, and shipping was temporarily excluded from GATS. The participants are committed to further negotiations.

Land transport[17]
As opposed to international sea transport, land transport across borders is still regulated. Until the end of the 80ses, *cargo transport* between Norway and a second country was organised by bilateral arrangements. The traffic permits were usually equally distributed between the two nations, and hauliers from third countries were excluded. From 1990, multilateral quota agreements were introduced within EFTA. In

1993, traffic between EFTA countries was opened for all operators from EFTA.

The domestic markets for cargo transport were far more protected. In the 80s, entrance into the Norwegian haulage markets required a concession grant based on a needs test. In the nineties, a traffic permit, ensuring professional conduct and financial solidity, became sufficient for haulage activity. Technical requirements remained as a barrier to foreign establishments. Until 1993, *cabotage* (= domestic transport performed by non-resident carriers) was not allowed in Norway, as in the other EU and EFTA countries. In 1993, a quota system was introduced within the Nordic countries. From autumn 1994, the EU rules on cargo transport were implemented as a part of the EEA agreement. This implied almost free access to bilateral traffic within the Area. Norway joined the EU cabotage quota system, implying restricted cabotage rights in EU countries, and vice versa. The EU legislation on harmonised technical, safety and environmental standards came into force, improving conditions for establishment in other EEA countries.

The markets for *passenger transport* are far less liberalised than the markets for cargo transport. In 1982, Norway signed an international agreement allowing *occasional* cross-border bus trips of closed groups or picking up passengers of your own nationality abroad for return to your country of origin. With the EEA agreement, Norwegian rules concerning more regular bus transport to and from one or few destinies within Norway, have been harmonised with those of EU. The rules still open for needs tests. Domestic passenger transport by road in regular routes requires a concession from the state. In such considerations, protection of the railroad traffic or already established bus companies is an important element. Most routes are monopolised and subject to price regulation. Though some harmonisation of the concession practice follows from the EEA treaty, needs tests are still allowed. In 1994, new rules opened for tender procedures in the allotment of concessions. To avoid such competition, an alternative practice has become common; the incumbent bus companies and the local governments agree on cost and subsidy reductions. While subsidies were previously given to balance deficiencies, fixed grants have become more common.

Taxi transport is also regulated by needs tests to control the supply. Taxis are associated to a local taxi central, which has geographically limited monopoly. Fares are regulated. Other passenger transport on a *non-regular* basis is open for all companies with authorisation. Ownership to the rail infrastructure on the one hand, and the rights to transport by *railroads* on the other, are organised in separated state companies. Norwegian rules open for companies to apply for constructing new

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[17] Sources: European Free Trade Association (1994), St.meld. nr. 32 (1995-96), and St.prp. nr. 100 (1991-92).

railroads or for hiring infrastructure from the state company, NSB, and to operate private transport services. New directions define parts of the subsidies to the transport services as remuneration for public services. With these last years adjustments of the railway system, the EEA treaty does not imply any further changes.

Post and telecommunication[18]
The EEA treaty, as well as the WTO, have contributed to a considerable liberalisation of the Norwegian market for telecommunication. Within 1998, the market for telecom infrastructure services and voice telephony is supposed to be open for free competition, and today, more than 20 foreign telecommunication operators provide services in Norway. The market for telecom technology, terminals and internal networks was liberalised in 1988 and digital mobile communication services were opened for free competition in 1990. The largest and previously state owned telecom company Telenor is still granted monopoly position in the market for public voice telephone services and the provision of telecommunication networks. Hence, Telenor has the unique position of being the only company that can lease out lines, but the leasing prices will be supervised by the Norwegian competition authorities.

Although Norwegian telecom service prices are among the lowest in Europe, prices in other Nordic countries (especially Sweden) are even lower. As a consequence, The entry of Swedish competitors may drive the prices further down on most telecommunication services. The WTO countries has recently agreed upon a treaty on trade in services, which opens for extensive deregulation of the global telecom market. This means that American telecom companies get better access to European markets where prices have traditionally been significantly higher (especially on international services).

The Norwegian post system has traditionally been run by a state monopoly, but is now partly liberalised due to the EEA and WTO treaties. During the last years, business mail servicing and different kinds of express mailing is opened for foreign competition, however, regular mailing services are still only provided by the public post system. The EEA treaty allows the member states to maintain a post monopoly to ensure a nation wide distribution network, but the EU is now considering changes in the regulation of post services to increase competition further.

6.5.4. Banking and insurance services[19]
Financial activities have traditionally been strongly regulated in Norway. According to Berg et al. (1993), in 1990 the Swedish commercial banks were found to be at least 30 percent more efficient than the Norwegian ones, a fact that may partly be explained by the relatively strict regulation regime of Norway. Nevertheless, since the mid 80s, substantial liberalisation efforts have taken place. This development is closely linked to new technological possibilities for cross-border movement of financial services and the internationalisation of commerce and industry. From 1984, liberalised rules and procedures for cross-border mobility of capital were implemented, along with several deregulations of the domestic credit market. Credit rationing and regulation of interest rates were abolished, and the legislation concerning different types of banks and financial institutions were harmonised, to ensure stronger competition in each market segment. Opening up of new branches became easier. Also, market access by foreigners were released, first by allowing foreign subsidiaries to operate in Norwegian markets, and in 1991 by allowing establishment of branches[20]. The liberalisation called for well-defined prudential standards and effective supervision, conducted by *Kredittilsynet* (*The Banking, Insurance and Securities Commission*) under the Ministry of Finance.

The banking crisis of the late 80s and early 90s resulted in capital injections from the state amounting to 30 billion NOK during the years 1989 to 1993. In addition, assets in the three dominant commercial banks (Den norske Bank, Kredittkassen and Fokus Bank) were overtaken by the state, after depreciating previous asset values to zero.

The EEA Treaty of January 1994 and its Additional Package in force from July 1994, encompass the entire legislation of EU concerning financial servicing, with some exceptions concerning relation to third countries. EEA institutions may establish, open branches or provide services across borders without any separate Norwegian authorisation, as long as the institution has license within an EEA member state. Activity within Norwegian borders must be notified to *Kredittilsynet*. Prudential rules (concerning minimum solvency, liquidity, ownership, foreign currencies, customer risk, interests in other companies, guarantee funds, accounting procedures etc.) have been harmonised. According to Nilsen and Sandal (1996), foreign establishments represented 4.3 percent of the total loan activity by commercial banks in 1995.

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[18] Sources: European Free Trade Association (1994) and World Trade Organisation (1996).

[19] Sources: European Free Trade Association (1994), St.meld. nr. 39 (1993-94) and World Trade Organisation (1996).
[20] A subsidiary (in Norwegian: *datterselskap*) is a more independent unit with separate capital, while a branch (in Norwegian: *filial*) relies on the capital of its parent company.

Remaining institutional restrictions on entry and trade are now mainly imposed on third countries. Establishment or provision of services of a non-EEA financial institution is not allowed, unless they have already achieved authority in another EEA member state. In the field of insurance, intermediation by an authorised broker of services originating from a non-EEA company, is allowed in marine and transport insurance, offshore insurance and insurance of large companies. After negotiations with the relevant third country, Norway is entitled to grant concession for any financial service activity. The other EEA contracting parties must be consulted, if the minimum prudential requirements in the EU directives are not fulfilled. Norwegian rules require that the managers, as well as at least 50% of the Board of Directors/Committee of Representatives, must be EEA member state citizens. Rules restricting foreign ownership were abolished in 1995. In the General Agreement on Services, GATS, in force from January 1996, Norway commits to "most favoured nation" treatment of non-EEA countries, i.e. discrimination among third countries is not allowed.

State ownership may represent a remaining obstacle to entry. In the three dominant commercial banks, the share of equities held by the state has been reduced gradually. Nevertheless, the government has announced a long run interest in some degree of continued ownership in the two larger, founded on national concerns. In addition, the state runs several specialised banks on a permanent basis. These provide credit for *inter alia* housing, education and regional development. Their lending quotas and to some extent interest rates, are yearly decided by the Parliament. The state also administers the public pension schemes. Private pension schemes represent a supplement and is partly co-ordinated with the public services. Social security services are state monopolised.

6.5.5. Other Private Services[21]

The omnibus category *Other Private Services* encompasses a variety of activities. (Those with registered trade are listed in Table 2.) Only the industries, within which we have found specific political regulations functioning as entry or trade barriers, are treated in this section. When comes to medical, social and educational services, the majority are provided by the government and thus not included in this category. Also, all trade in such services are performed within the public sector. Therefore, medical, social and educational services are, as well, excluded from the subsequent discussion, though comprehensive regulations certainly exist.

Exercising *professions* in Norway (as lawyers, accountants, architects etc.) requires formal education, as well as authorisation by the government. Similar requirements are common in other countries, though specifications may vary and thus represent obstacles for providing the services abroad. The EEA treaty ensures that authorisation in one of the countries is sufficient for practising in any other EEA country, conditioned on an application. When the profession requires country-specific knowledge or when the syllabus deviates substantially between the education in the two countries, a test or a practice period may be demanded.

The *hotel and restaurant* industries are regulated by the Hotel Act of 1983, which authorise the local governments to give licences. Specifications on classification standards and on the manager's qualifications are given. Also the acts regulating closing hours and serving licences for alcoholic beverages, are of importance for hotels and restaurants. Foreigners meet no special market restrictions. The EEA treaty tightened the rules concerning consumer protection. Fire safety standards and tourist insurance were improved. Also, hotel ratings and advertising rules were standardised.

Culture and media have traditionally been a field of governmental concern. Until recently, the *Norwegian Broadcasting Co-operation (NRK)*, had monopoly on public service broadcasting. Public support and licence fees financed the activities; all advertising and sponsoring were illegal. Since 1989, private companies have been allowed to broadcast via satellite on Norwegian territory. In 1991, the private television broadcasting company *TV 2* was granted concession based purely on financing through advertisement. *TV 2* began its broadcasting in September 1992. Still, *NRK* is authorised to collect fees. A private radio station, also financed by advertisements, was granted concession in 1993. By the time of the EEA negotiations, Norwegian regulations on advertising essentially coincided with those of EU. The major deviance applied to advertising of alcoholic beverages. The result of the negotiations was that EFTA countries gained the right to maintain previous prohibitions.

Cultural and artistic production is promoted by several national foundations, public remuneration arrangements, scholarships and support schemes. To fulfil the non-discrimination principle in the EEA treaty, certain adjustments in the allotment criteria were necessary. Criteria concerning language and place of residence are still acceptable. EU Directives, as well as the WTO Treaty on immaterial rights, affect cultural and media products. The international treaties ensure minimum protection of originators of design, performance and work of art, and regulate sales, borrowing and hiring of artistic products.

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[21] Sources: European Free Trade Association (1994), St.meld. nr. 32 (1992-93), St.prp. nr. 100 (1991-92), Nesheim (1993) and World Trade Organisation (1996).

7. Conclusions

This report evaluates the relevance of classifying
service industries as sheltered industries, as done in
several macro economic models. For this purpose a
substantial part of the paper is devoted to establishing
a conceptual framework for the study of services, and
their particular market structures and political
circumstances. This framework is linked to empirical
findings on trade and competition. On this basis we
conclude that several services should be reclassified as
tradables. However, the industrial organisation of
service industries is seldom competitive. Models of
service industries must account for monopolistic
competition between differentiated products, fixed
costs, as well as strong elements of governmental
regulations.

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Application to the ERA model

An introduction to the ERA model[22]

This part is devoted to the applicability of the points made above, to an applied price model used in Statistics Norway for computing *Effective Rates of Assistance* (ERAs)[23]. ERA is a summary measure of how taxes, subsidies, protection and other forms of industrial policies affect unit factor income of an industry. Policies may be imposed on commodities or industries, while factor income is an industry concept. The model framework used for ERA calculations thus requires input-output tables which link industries to commodity flows. The model specifies 41 commodities and 24 private industries. Each commodity is a so-called *main commodity* of one and only one industry. In every industry there is constant returns to scale technology and perfect competition. The commodities are regarded as homogeneous. Thus in each market prices of similar products will be the same and equal to unit costs.

The direction of causality in the price/cost relation differs, depending on the tradability of the main commodities of the industry. The modelling is similar to most models of small, open economies. For industries producing non-tradables as main commodities, prices of their commodities are endogenous and adjust to changes in unit costs. These industries are characterised as *naturally sheltered*. On the other hand, prices of tradables not subject to any trade barriers are determined outside the model by exogenous world market prices and freight costs. Shifts in unit costs of industries exposed to international competition (*exposed* or *competing* industries) will have the effect of altering factor income per unit, i.e. ERA will change.

In presence of import barriers[24], price determination falls in either category, depending on the characteristics of the barriers: If the trade policy measure represents a fixed extra cost of importing, the price determination resembles that of unprotected tradables. In addition to foreign prices and freight costs, the price is adjusted by a fixed cost margin representing e.g. a tariff or another cost of penetrating the market. Examples of penetrating costs may be technical specifications that increase production costs in the exporting country, or home preferences in

governmental procurement formulated as a fixed acceptable price gap between the domestic and the foreign tenders. Industries producing tradables protected by penetration costs as main commodities, will obtain ERA changes from changes in assistance. If, on the other side, the import barriers totally prohibit imports or allow imports of a fixed amount, only, the price determination resembles that of non-tradables. Industries producing potentially tradable main commodities which are completely sheltered by political measures (*politically sheltered* industries), will by definition have ERAs equal to zero. Industrial policies that shift costs will rather affect the producer price of the main commodity.

Naturally or politically sheltered industries play a potentially important role in the ERA calculations. Though they by definition obtain no effective assistance, the effects of their assistance are transmitted to consumers of intermediates via input prices. Hence, for a given input-output structure, these measured *input-output-corrected* effects of assistance hinge on the chosen division between exposed and sheltered industries.

ERA calculations were originally suggested as a means of indicating allocative effects of assistance. The ranking of unit factor income changes due to assistance will - in simple HOS models for small, open economies - predict the qualitative reallocation of resources. In presence of sheltered industries, this is however only true for the *input-output-adjusted* resource allocation (see Holmøy et al. (1993)). The ERA model is not able to predict relative changes in the sheltered sector, nor is it able to split the direct resource use of an exposed industry from the indirect resource-use via input from sheltered industries. Thus in general, the indicative ability of ERAs diminishes with the size of the sheltered sector.

The classification in the ERA model correspond largely to the division made in the inflation model PRIM of the sixties (Aukrust (1971)). At present, the following industries are modelled as sheltered, implicitly assuming *natural* barriers to trade:
* Construction activities (*bygge- og anleggsvirksomhet*),
* Wholesale and retail trade (*varehandel*)
* Air transport etc. (*lufttransport m.v.*)
* Domestic sea transport (*innenriks sjøfart*)
* Road transport etc. (*landtransport m.v.*)
* Railway transport (*jernbane- og sporveistransport*)
* Post and telecommunication (*post og telekommunikasjon*)

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[22] See Holmøy et al. (1993) and Fæhn et al. (1995) for thorough presentations.

[23] Fæhn et al. (1995) and Holmøy and Hægeland (1995) (in English) report Norwegian ERA computations for 1989 and 1991, and Fæhn and Hægeland (1996) report 1994 figures.

[24] Export subsidies to industries producing exportables will have an analogous effect, see e.g. Fæhn et al. (1995) chapter 2.

- Finance and insurance (*bank- og forsikringsvirksomhet*)
- Other private services (*andre private tjenester*)
- Dwelling services (*boligtjenester*)
- Production of electricity (*elektrisitetsproduksjon*)

The public sector is excluded from the ERA model, as activities, included value added, are assumed to be directly determined by the government, rather than indirectly affected by industrial policy. The shipping industry is also deliberately excluded from the ERA studies, based on the argument that it absorbs an negligible amount of the scarce resources in the economy, being primarily provided by foreign produced capital goods and foreign labour. Hence, there is reason to believe that the ERA results are not significantly affected by omitting this industry. Services related to oil production are excluded of similar reasons.

Suggestions concerning implementation in the ERA model

A new division between tradables and non-tradables

The hitherto *naturally sheltered* service aggregates of the ERA model correspond to the service groups listed in Table 3. The Table shows the percentage of the gross production value of the ERA service industries, involved in some kind of registered trade in 1992. In spite of the emphasised downward bias in the proportion estimates (see Section 4.4), the figures indicate that the service aggregates in the ERA model are quite heterogeneous with respect to tradability. Thus, it would not be satisfactory to treat the aggregates as completely tradable or completely non-tradable (in other words, to treat industries as completely sheltered or exposed). To maintain this important aspect of heterogeneity, we suggest to split each model industry into two quasi industries, one exposed and one naturally sheltered. The size of each quasi industry would be based on their proportion of industry gross production value that is associated with trade, see Table 3. The sub-industries would be quasi in the sense that the aggregation level of the ERA model is given with respect to all remaining information. Therefore, they would have similar input-output structures. This is of course a strong assumption. Changes in factor rewards for the industry as a whole would be a weighted average of the changes in the two industries[25]. Since dwelling services appear completely without registered trade, we suggest to let this industry remain naturally sheltered.

To obtain a successful revision of the ERA estimates, we must provide data on NTB's directed towards imports of such services. Section A.2.4 below

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[25] For more on this method, see Fæhn et al. (1995) Chapter 2.3 and Appendix 2.

comments further on this task. If possible, it would be valuable to differentiate the quasi industries with respect to other kinds of information, e.g. their respective net subsidy rates. As already pointed out in chapter 6, information on industrial policy towards sheltered sub-industries would be more complete if supplemented with estimates on regulation. A framework for doing this is presented in section A.2.3.

Imperfect competition in the ERA model

Chapter 5 concludes that mark-up pricing is common in many service markets, exposed as well as sheltered. This violates the central assumptions in the ERA model of perfect competition and unit cost pricing. The model in its present form transforms changes in unit costs from altered support into *price* variations in the case of sheltered industries, or *factor income* variations in the case of exposed industries. In industries characterised by imperfect competition, unit cost variations may both affect prices and mark-ups, the latter being part of factor income. This indicates a need for some hybrid price determination model, that would divide effects of assistance into price and mark-up shifts. Price determination in markets with imperfect competition will depend on the demand structure. The ERA model in its existing form provides no such information and will not be able to determine the degree to which mark-ups and prices change. For this an extended model would be required. An additional severe problem arises from the fact that changes in assistance may not only affect the magnitude of mark-ups and prices, but may change the very nature of price-setting behaviour in the industry. The structure of imperfectly competitive markets may be very sensitive to changing circumstances. This complicates analyses of assistance to service industries, as hypothetical changes in the competitive structure of markets are difficult to predict. Further, there exists no obvious solution to how different market structure models within one industry aggregate should be weighted.

The indivisibility of unit cost changes presented above is only part of the insufficiency of the ERA model in case of imperfect competition. Another and far more serious problem is the impairment of the indicative ability of the ERA model. The original purpose of ERA calculations is to grasp the allocative implications of industrial policy. An attempt to define an indicator of structural changes from industrial assistance in presence of monopolistic competition is made in Hægeland (1995). Experience shows that the complexity and input requirements are high related to the predictive ability of the indicator.

In spite of our arguing that the assumption of perfect competition is generally less realistic for services than for goods, we will not suggest to work further on including imperfectly competitive markets in the ERA model. Thus, the two categories of price modelling in

the ERA model must embrace all the service industries, as well. They are both implicitly based on assumptions of perfectly substitutable services, perfect competition among firms and constant returns to scale technologies. Services will therefore fall into one of the following two categories:

1) For *tradable services* prices are determined by world market prices inclusive of natural trade barrier costs, as well as penetration costs of trade policy measures. Industries producing tradable services as main commodities (*exposed* industries) will shift unit cost changes on to primary factor income.

2) *Naturally sheltered* industries shift all unit cost changes on to prices, while primary factor rewards remain unaltered. This price model may also be assigned to an industry producing potential tradables as main commodities, as long as it is *politically sheltered*. That is, its main commodities are untraded due to sustained prohibitive/quantitative political trade barriers.

Regulations in an ERA context

Regulation of the sheltered service sector is not yet included in the ERA analyses. An operational definition of *regulations* for the purpose of ERA calculations leaves out regulations that merely have the effect of influencing the characteristics or identity of the market participants, and focuses only on the effects on market outcomes (i.e. prices, mark-ups and quantities). Market outcome changes from altering regulations may well be a consequence of changes in the industrial organisation and price-setting rules, per se.

The task in an ERA study is to quantify the changes in prices and factor income per unit induced by moving from a *reference regime* influenced by the existing industrial policy, including regulations, to an alternative hypothetical policy regime. According to our ERA tradition, the following alternative regimes would be relevant:

1. Net subsidies eliminated, all other measures, including regulations, maintained.
2. Discriminatory electricity prices eliminated, all other measures maintained.
3. Trade policies eliminated, all other measures maintained.
4. Regulations eliminated, all other measures maintained.
5. All industrial policies, including regulations, eliminated.

Regulations may take 3 forms, distinguished by the mechanisms through which they affect market outcomes:

- *price-regulations* are regulations exercised directly on prices, by e.g. fixing the prices, price growth or price gaps between two states.

- *quantity-regulations* regulate quantities, e.g. by imposing minimum or maximum supply limits or by assigning quotas to particular market agents.
- *mark-up-regulations* fix the (maximum) gap between unit (or marginal) costs and prices.

The third class of regulations is only an option whenever the market structure is imperfectly competitive. Such regulations are rare, owing to the fact that mark-ups are difficult to survey.

In section A.2.2 we recommend to keep intact the assumptions in the ERA model of perfect competition and constant returns to scale technologies. There are two implications related to omitting the possibility of mark-up pricing. First, mark-up regulations may only be studied in an ad hoc manner. Second, combined price/mark-up effects like those described in section A.2.2 will have to be substituted by pure price changes. Estimates of policy effects related to regulations would of course become less accurate by restricting the scope of modelling. The modelling task would, however, become easier. Below we depict a framework for studying policy changes to regimes 1 through 5 above, under the assumptions of perfect competition. Sources of bias due to this assumption are pointed out wherever necessary.

Analyses of moving to regime 1, 2 or 3 require first, information on the market price in the reference regime. This is in principle observable. Second, the policy changes must be quantified. The quantification methods are familiar from previous ERA studies. Third, information on the mechanisms that are triggered in case of moving to regimes 1,2 and 3 is required. These will depend on the nature of the maintained regulations. Analogously to the case of protection (see e.g. Fæhn et al. (1995), section 2.1), the mechanisms induced by other policy changes will depend on whether the regulations are *price-regulations* or *quantity-regulations*. Here we also have a third option, *mark-up-regulations*. Even though *mark-up-regulations* are directly ignored due to the assumption of perfect competition, policy changes in presence of such regulations may be studied in an ad hoc manner, as changes in mark-ups would be controlled exogenously by the regulations. Thus, regardless of the competitive structure, the familiar situation for sheltered industries applies. Unit cost changes are fully shifted on to prices, and ERAs are by definition zero. Also in case of maintained *quantity regulations* and no mark-ups, the effects of unit cost changes are shifted on to prices. In a hypothetical model of imperfect competition with possible changes in mark-ups this would result in ERAs different from zero and modified price changes. In case of *price regulations*, changes in unit costs shift fully on to factor income, and ERAs may be calculated. This applies regardless of the competitive structure. To conclude, in a perfect competition model, the interesting novel achievement from including regulations in partial

policy analyses is that we may calculate ERAs for *price-regulated* sheltered industries. Other sheltered industries will, as before, obtain zero ERAs.

A study of movements to regime 4, where all regulations are removed, requires quantification of the resulting price shift. The regulated case is represented by the observed price. It reflects either the regulated price or the equivalent price of the quantity regulation. Mark-up regulations may not be studied, as mark-ups are by definition zero under both regimes. In case of no regulations, the price would adjust to the new regime. Estimating the hypothetical price of regime 4 would require a specified underlying hypothesis on the alternative market structure. Whether observed proxies to this price exist, depends on the specific interpretation of the situation. One might be able to extract relevant information on the unregulated regime 4 from prices of particular market participants, prices in other countries or observations from the past. By assuming constant unit costs, the estimated price shift will be fully reflected in factor income changes, and ERAs from regulations - or *effective rates of regulations* - may be calculated. This is true regardless of the competitive structure and the element of mark-ups in the two compared prices.

Regulations, as well as all other industrial policy, are removed in regime 5. Above, we commented on the calculation of price effects and consequent ERA reflections from removing regulations. When regulations are absent in a perfect competition ERA model, removing all other industrial policy would result in price shifts in the sheltered industries. The industries would obtain ERAs only from the removal of regulations, while the other changes would not contribute to ERAs, but to price shifts. However, a model with mark-up pricing would possibly result in some mark-up changes that could modify these price shifts.

Proper modelling of regulations of sheltered industries, which mainly produce services, would require modelling of various imperfectly competitive market structures. This would represent a task far beyond the present ambitions of ERA analyses. In particular, the demand side would have to be involved. As emphasised in section A.2.2, calculating indicators in case of imperfect competition have not proved to be very fruitful. In light of this, we have considered the possibility of including regulations, while *maintaining* the assumptions of perfect competition and constant returns to scale. We will emphasise that the deviance between market outcomes of such approximations and the real market structures may be considerable[26].

To conclude, as long as perfect competition is assumed, modelling of regulations would in principle be feasible and could be regarded as an improvement of the study. Quantifying the effects of other industrial policy measures under the presence of regulations would not involve new methodological problems. The quantification of the effects of regulations per se would however introduce new challenges of estimating price gaps, as the alternative price in absence of regulations is unobservable. We would not avoid conjecturing on the most probable market structures and outcomes. The task of quantifying regulatory measures may involve considerable efforts, but should be practicable.

Protection of services in an ERA context

While the ERA model previously has been used to study protection of tradable goods, a reclassification will render quantification and modelling of protection in several service industries imperative. The problems associated with mark-up pricing will be of relevance also when quantifying effects of protection. By maintaining the assumptions of the ERA-model, however, protection of services may be modelled analogously to protection of goods. As for the case of goods, NTBs on services may be divided into quantitative/prohibitive measures on the one side and measures increasing penetration costs on the other. As pointed out in Section A.1, it is important to make this distinction in relation to ERA, as the two classes of measures have qualitatively different effects. Quantitative measures include prohibitions or quotas on selling or establishing in the country or on consumption of foreign services. Also all rules which *practically* exclude all foreign competition (prohibitive measures) function in a similar manner. Penetration costs do not prohibit imports, but merely increase the costs of buying the foreign service. They may shift the type of foreign competition to a less efficient one or they may shift the origin of services to relatively high-cost producers[27].

Absence of trade is not a sufficient indication of protection, as absence of trade may result from persisting natural barriers. The only way to state whether and to what extent protection exists, is to quantify the costs of natural barriers and compare these to the price gaps between domestic and foreign prices. A possible deviance may be ascribed to present trade barriers. A mapping of the trading environment for each service industry is presented in section 6.5.

The method of quantifying NTBs would be the same for services as for goods. However, in case of services, this method is both principally and practically problematic. The principle hesitation is first of all associated with

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[26] To grasp the magnitude of the errors made, empirical testing of different models of the existing market structures should be done. The hypothetical cases may in general not be tested, and modelling would have to rely on competent guessing. By comparing market outcomes of the probable market structures with the approximation of perfect competition, an indication of the deviance may be achieved.

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[27] This may be the case if trade policy discriminates with respect to nationality. For instance, prohibiting imports from countries potentially supplying at lowest costs, will shift costs upwards to the import cost of the (cheapest) allowed imports.

the exclusion of differentiated products in the ERA model. In reality, existence of product differentiation makes it troublesome to distinguish between natural and political barriers. One may always argue that the domestic service is not totally comparable to foreign substitutes, thus having its own market. If incumbent firms tend to be of domestic origin, claims of discrimination may well occur even if the present incumbents are the natural ones. Due to the heterogeneous character of services, local and cultural proximity may play a decisive role in the competition between two services produced domestically and abroad. If the two services cover the same need, their prices may be compared. Here we encounter another principle hesitation: In case of experience goods, like most services, the satisfaction of needs cannot be evaluated unless the service is already consumed. Hence, price comparisons *ex ante* are impossible.

Even if the principal doubt on the fruitfulness of identifying protection is rejected, practical problems remain. First, one must set up a sufficiently exhaustive list of quality aspects that comparable services must possess[28]. Second, their prices included natural transaction costs must be quantified. As for goods, there are problems related to collecting price data (see Fæhn et al.(1995) p. 18). Additional problems apply to service prices. First, service transaction costs largely consist of costs associated with interaction (for example costs of cultural barriers), which are extremely difficult to measure. One solution might be to compare services in nations with close cultural and linguistic relations. Second, the fact that foreign competition may take on several forms (see section 3), makes the scope of price mapping comprehensive. If prices on foreign supply are observed, it must be neatly considered whether more effective forms (or origins) of potential supply are excluded[29].

Provided our recommendations concerning reclassification of several services are carried out, the need for quantifying possible protection follows. As outlined above, many particular aspects of services would complicate this task, when compared to quantifying protection of goods.

Summing up the suggestions

The appendix is devoted to designing a framework for implementation of our conclusions into the ERA model of Statistics Norway. We make some suggestions concerning a tentative new division between exposed and sheltered industries. A more extensive mapping of data would be required if the division was to be further refined. Within each service aggregate of the model, the degree of tradability seems to vary. Thus, we recommend a division of most service industries into one sheltered and one exposed sub-industry. For the exposed part of the service sector, possible protection rates will have to be quantified. Several policy instruments directed towards sheltered industries, commonly termed *regulations*, may also be introduced. We provide a framework for including regulations and protection based on the present assumptions of the ERA model. This includes the assumption of *perfect competition*, which we recommend to maintain. The very idea of the ERA model as well as the simplicity relies on this assumption of perfect competition, and experience has shown us that the incorporation of alternative price determination models is complex.

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[28] International agreements on governmental procurement suggest such a procedure. Tenders fulfilling some detailed specifications should be ranked and given preference with respect to price .

[29] An analogous aspect is also present for goods, in case of discriminatory protection with respect to nation of origin.

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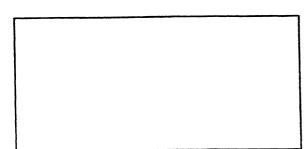   of Trade Policy Analyses.

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