Working Paper No. 73/00

Structural Changes in Norway's Fish Exports and the EEA Agreement

by

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SNF-project No. 5310
"Margins along the European seafood value chain.
Impact of the salmon industry on market structures"
The project is financed by the European Commission

SNF-project No. 5125
"Markedsanalyser av hvitfiskmarkeder"
The project is financed by the Research Council of Norway

Centre for Fisheries Economics
Discussion paper No. 13/2000

FOUNDATION FOR RESEARCH IN ECONOMICS AND BUSINESS ADMINISTRATION
BERGEN, NOVEMBER 2000

ISSN 0803-4028

1. INTRODUCTION

The purpose of this paper is twofold. First, it describes the composition of Norway's exports of fish products and how it has changed over the last decade. The question we wish to answer is whether processed products have become more or less important over this period. If not, it would indicate that fish processing is not particularly profitable, at any rate at Norwegian costs of production or terms of market access. This is an important question, since it seems sometimes taken for granted that the higher the degree of processing the better, and that industrial policy should aim at encouraging further processing of fish.

The second purpose is to examine the effects on Norwegian fish exports of the so-called EEA Agreement concluded in 1992. The acronym EEA stands for European Economic Area and is not widely known. This area covered the countries that remained in the European Free Trade Area (EFTA) in the early 1990s (Sweden, Finland, Norway, Iceland, Austria and Switzerland) and what was then known as the European Community (EC), but three of these later joined the EC. The EEA treaty, concluded between the Community and the members of EFTA, gave the EFTA countries access to certain rights and obligations among the member countries of the Community. Fisheries policy and fish trade were among the matters not included among the shared rights and obligations, but a separate agreement was concluded between the Community and the fish exporters in EFTA about these issues and comprised, among other things, certain tariff concessions for fish products.

Tariff concessions are usually expected to lead, first, to higher prices being obtained by the exporters and then, as a consequence, to greater exports of the products involved to the country or group of countries granting the tariff concessions. These increases in exports do not necessarily mean greater exports in total; many fisheries are regulated by catch quotas so that the total production is independent of prices and tariffs, provided the prices are high enough to make it worthwhile to catch the full quota. In such cases we would expect the increase in exports to be at the expense of other types of products derived from the same raw material and not included in the tariff concessions. In other cases it will be possible to expand the total production in response to tariff concessions. In either case the market share for the countries granting the tariff concession should increase.

The extent to which the said tariff concessions affected the composition of Norway's exports is also an indication of whether or not a higher degree of fish processing is an interesting option for Norway. If exports of more highly processed products have failed to respond to these tariff concessions it would indicate that a higher degree of processing is not a very profitable option. Furthermore, the response, or the lack of it, to the tariff concessions granted by the European Community is also of interest with regard to whether and to what extent the tariffs of the European Union are an effective hindrance for Norway's fish exports to the Union.[1] If the tariff concessions have

[1] The name changes of what is now known as the European Union sometimes make it cumbersome to write about it. What used to be known as the European Common Market (EEC) changed its name in the early 1970s to the European Community. In the mid-1990s the name was again changed to the European Union. These name changes reflect ambition more than reality. This is not a unique phenomenon. "Indians" has stuck with the indigenous peoples of the Americas, despite being due to Columbus' disorientation. The Solomon Islands were so named by Spaniards who set out from the Pacific coast of Mexico to search for King Solomon's silver mines, believing when they came to these

failed to increase the share of exports going to the Union it would indicate that the tariffs are not very effective as a hindrance to exports, unless the tariffs are still high enough to be a prohibitive barrier to trade even after the tariff concessions. In cases where the tariffs have been eliminated the latter obviously could not be true. Other tariff concessions were substantial—70 percent over a period of five years, and the tariff remaining after this transition period is 5.5 percent at most. It is difficult to believe that a tariff of that magnitude is a prohibitive barrier.

This study focuses mostly on captured fish, the reason being that salmon, the most important of the farmed species, was not affected by the EEA Agreement. The current tariff regime for salmon and products derived from it predates the EEA Agreement. The agreement did, however, result in a reduction of tariffs on farmed trout. We will also consider the exports of mussels and oysters, both of which were affected by the EEA Agreement and considered to represent a development potential for fish farming.

The paper is organized as follows. The next chapter (Chapter Two) is an overview of Norway's fish exports and how their composition has changed since the late 1980s. Chapter Three considers the effects of the EU tariffs. It begins with an overview of the EU tariffs faced by Norwegian exporters and the share of the EU market in the exports; the expectation here is that the higher the tariff the lower the EU share. The empirical picture is surprisingly mixed. Then the change in the EU share of exports of the various products in response to the tariff concessions of the EEA Agreement is examined statistically. The result does not indicate that the tariff concessions have had much effect.

Chapter Four takes a more detailed and qualitative look at the changes in the composition of exports and how they might have been affected by the EEA Agreement, in a species by species approach. Again the focus is on whether the production of highly processed products has expanded faster than less processed ones, and whether the tariff concessions of the EEA Agreement has had any positive results. There are some indications of a positive effect of the EEA Agreement, but mostly the changes in the composition of exports seem to be away from processed products. Finally, Chapter Five concludes.

islands that the mines were within reach. In this note we will use the names Community and Union when referring to events occurring before and after, respectively, the said name change.

2. THE COMPOSITION OF NORWAY'S FISH EXPORTS: AN OVERVIEW

Over the period 1988-99 the value of exports of fish products from Norway almost trebled, from about 10 billion kroner to 30 billion.[2] Over that same period the consumer price index rose by 33 percent. There has thus been a very substantial real increase in the exports of fish products, more precisely 225 percent if we deflate by the consumer price index. Figure 2.1 shows the development of fish exports, both for the capture fisheries and for farmed fish. The growth in both sectors has been remarkably similar; the exports of farmed fish remained around one third of the total until 1999, a year in which the capture fisheries suffered a decline.[3]

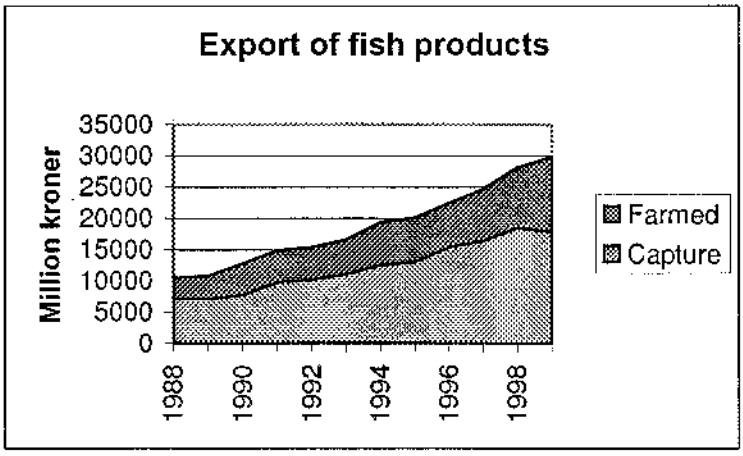

Figure 2.1

Exports of fish products derived from captured versus farmed fish.

Figure 2.2 shows the exports of products of farmed fish. Fresh whole salmon has always been by far the most important of these, even if its share has fallen from about 80 percent in the late 1980s to 60 percent in 1999. This decline is due to a substantial increase in the exports of fillets (both fresh and frozen, and also including trout), but the export of fresh and frozen trout has also increased handsomely after a major dip around 1990. Nevertheless trout is far behind salmon, with only about 10 percent of the total in recent years. Smoked and processed salmon are a small share of the total, only 2 – 5 percent. Exports of Arctic char are insignificant and not visible in the figure, being less than one percent of the total. Export of processed products thus

[2] The data on exports come from Statistics Norway, obtained through the Norwegian Fish Export Council.

[3] The division between farmed and captured fish is not exact. The export statistics do not always distinguish between products derived from captured and farmed fish but has increasingly been getting more detailed on this point. The products identified as coming from farmed fish are fresh and frozen salmon and trout, fresh Arctic char, smoked salmon and processed salmon. Some of the products did not appear separately in the statistics until the 1990s; salmon fillets started to appear in 1991, Arctic char in 1992 and trout fillets in 1997. Prior to that time these products were lumped together with other products. The capture fisheries have been defined here as everything other than the said products identified as farmed fish, so the farmed fish sector is somewhat larger than the figure indicates, but this discrepancy is probably small.

plays only a minor role for farmed fish; the bulk of the export is fresh or whole frozen fish.

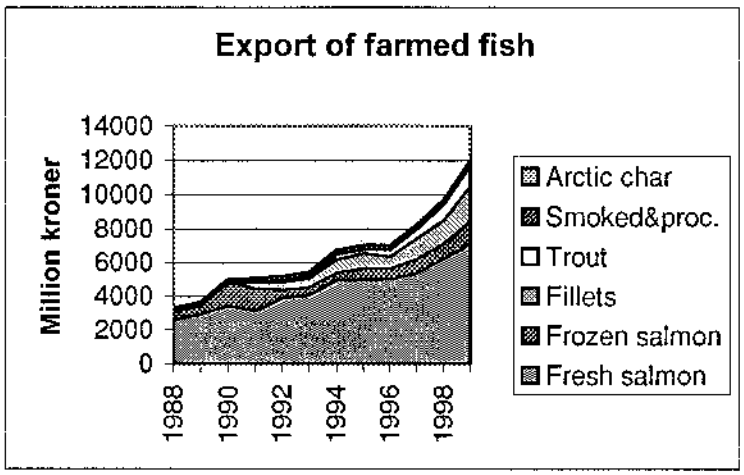

Figure 2.2

Exports of farmed fish.

Turning to the capture fisheries, Figure 2.3 shows the exports of captured fish 1988 – 99. The most important category is salted, dried and smoked fish, which is roughly one third of the total. The next largest is whole frozen fish, which has been growing particularly fast; the exports in 1999 were more than seven times greater than in 1988. The third largest category is fillets, both fresh and frozen, which in most years have been about 20 percent of total exports. Exports of fresh fish have grown fast; in 1999 they were almost three times greater than in 1988, but fresh fish is still only about seven percent of the total export value. Meal and oil show similar development and are about as important as exports of fresh fish. Exports of processed products such as breaded fillets and various products of crustaceans and molluscs have declined in relative terms and were in 1999 about nine percent of the total; these exports increased about 30 percent over the period considered, which is on par with the rise in the consumer price index, so in relative terms the exports of these products can be said to have stagnated. Exports of live fish are insignificant, less than one percent of the total.

This overview indicates that the impressive increase in exports has been first and foremost in the exports of fresh and whole frozen fish while processed products have been either stagnant or increased less. There are several possible explanations for this. One is that the processing of fish simply is too costly and does not result in an improved quality that the consumer is willing to pay for. Fish processing would then be a second best option, to be taken only when it is difficult to sell a fresh and inherently more valuable product. Increases in the exports of fresh or lightly processed fish would then be the result of taking better advantage of market opportunities.

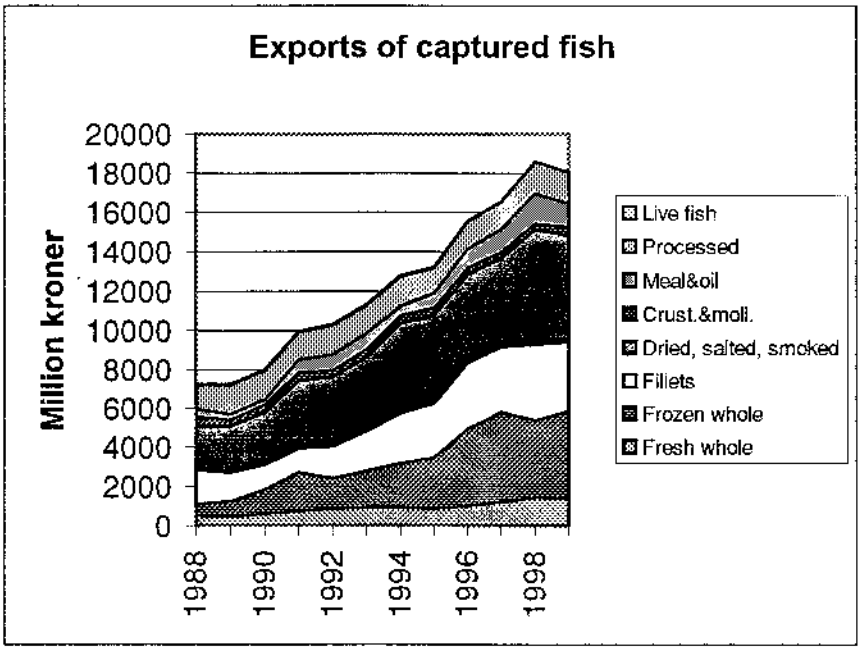

Figure 2.3

Exports of products derived from captured fish.

Another possible explanation is that Norway does not have a comparative advantage in fish processing. High wage costs together with a high labor intensity in fish processing, and the disadvantage of being far from the markets, would then make fish processing an unprofitable operation in Norway, encouraging exports to the fresh fish markets or for further processing closer to the final markets. A third possible explanation is that access to the final markets is for some reason difficult for Norwegian producers. One reason that comes to mind is the tariff structure in the European Union, which tends to protect fish processing inside the Union with tariff rates that rise with the degree of processing. This might bar Norwegian processors that otherwise would be competitive from the market.

The categories presented above are rather broad aggregates of products derived from different types of fish. What does the picture look like when we look at individual fish species? In Chapter Four we compare the development of the various types of products derived from one particular type of fish with the supply of that same type of fish (catch plus import of raw or whole frozen fish). If the stagnation or decline of processed products is a universal phenomenon we would expect it to show up in a development that lags behind supply, with the exports of fresh or lightly processed fish increasing more rapidly.

3. THE EEA AGREEMENT

As stated in the introduction, the EEA Agreement resulted in tariff concessions for a number of fish products. Exactly how many products were affected is a matter of how a product is defined. The export statistics for 1997-99 identify 175 types of fish products, excluding live fish, fish meal and oil, and animal fodder.[4] Of these, 129 product types, or 74 percent, were granted tariff concessions by the EEA Agreement.

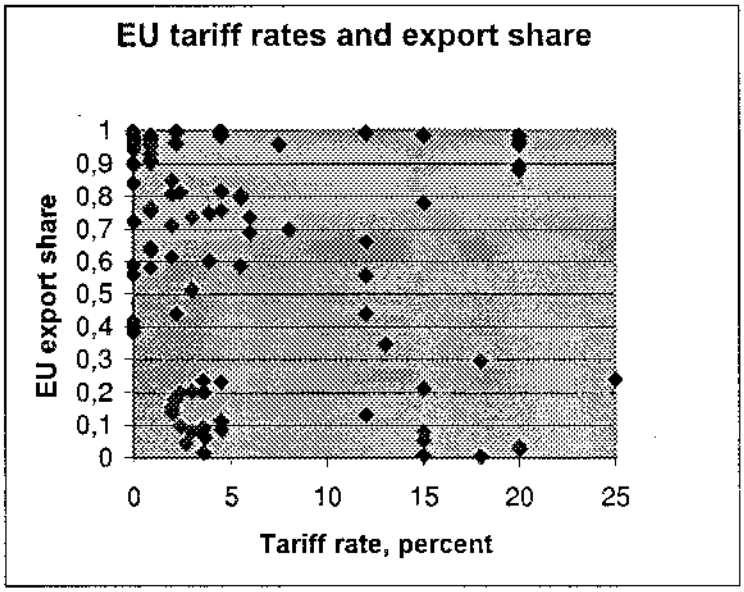

Figure 3.1

EU tariff rates for 104 fish products from Norway and EU's share in Norwegian exports 1997- 99.

Below we shall take a closer look at products derived from different types of fish but, first, let us look at the overall picture. Figure 3.1 shows a plot of the EU tariff rate for about a hundred Norwegian products and the EU share 1997-99 in the exports of these products.[5] At first glance there does not seem to be much of a correlation here; the points in the plot are scattered all over the diagram. Products with tariff rates as high as 15 – 20 percent have both a low and a very high EU share in exports. On further inspection it is possible to explain the high EU share in the exports of these products by transportation costs or limited appeal outside the EU. For the 20 percent tariff the two products with a low EU share of the exports are frozen mackerel (two size classes), which are easily transported over long distances. There are five products with a high EU share in exports; peeled shrimp, in brine and otherwise, spiced herring, herring in vinegar, and fresh mackerel. Fresh mackerel would certainly be expensive to transport over long distances. For spiced herring and herring in vinegar there may not be much of a market outside the EU. The two products with a 15

[4] This number is slightly higher than warranted, since the export statistics in 1997 distinguished between frozen whitefish fillets with and without skin, but in 1998 started to use the categories "blocks" and "other fillets." All of these appear as separate products for technical reasons.

[5] The products included are those with exports worth more than 50 million kroner over the three year period 1997-99. These number 104. The market share of the EU is calculated for the three year period. The period 1997-99 was chosen because 1997 was the first year when all tariff concessions had come into effect.

percent tariff and a high EU share in exports are fresh herring (North Sea herring and winter herring) while the four products with a low EU share are frozen herring of four different types. High tariffs may therefore be more effective as barriers to trade than this diagram indicates.

Let us next turn to an analysis of the tariff concessions given for Norwegian products by the EEA Agreement. These concessions were of a variable degree. Some tariffs were abolished altogether immediately (i.e., from the beginning of 1993 onwards) while other tariffs were reduced by 70 percent over five years, beginning in 1993. The largest tariff concession was one from 30 percent to zero (false caviar) while a more typical reduction was one from 12 to zero (fresh whitefish, for example). The picture is further complicated by the fact that for some products there were tariff free quotas (salted and dried cod), but at the margin the tariff reduction is likely to have been equivalent to the nominal reduction, which is what counts for changes in exports.

To analyze the effect of the tariff concessions, we have looked at the changes in the EU shares in the exports of all products from 1990-92 to 1997-99. The first period immediately preceded the beginning of the tariff concessions while in the latter all concessions had been fully implemented. As earlier stated, the tariff concessions should have increased the EU share in the exports of the products involved, either at the expense of other markets or by increased production for the EU market. It may be noted that the classification of the exports has changed slightly from the first to the last period (and even within each period); not all products identified in 1997-99 were so identified in 1990-92, but we have tried to make all categories comparable and excluded those that do not seem to be comparable. The number of products appearing in both periods is 175, after excluding live fish, fodder fish, and meal and oil. Of these, 129, or 74 percent, were affected by the tariff concessions.

A non-trivial change in export share should exceed some reasonable minimum. Using a criterion of five percentage points (0.05) we find a significant increase in EU export share for 25 products and a fall in export share for 88 products, while for 62 products the change was less than five percentage points, in either direction. The question is then, were the products with a rising export share the ones that got a tariff concession? It turns out that 18 of these 25, or 72 percent, did get a tariff concession. This is close to the share of products that got a tariff concession (74 percent) and thus close to what would have happened if changes in the export share had been entirely random. The same is true of the products with a falling export share; 62 of these 88 got a tariff concession. This amounts to 70 percent, which surely is less than 72, but the difference is by no means significant.[6] Lowering the arbitrary criterion of a significant change in export share does not affect this conclusion, as shown in Table 3.1; as we lower the criterion of a significant change in export share, we find that the share of products that got a tariff concession is highest for the products with a falling EU share in exports.

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[6] We are comparing two shares, $s_1 = 0.720$ and $s_2 = 0.705$. The sample sizes are $n_1 = 25$ and $n_2 = 88$. The difference between the shares is 0.015 and the standard deviation of the difference is

$$\sqrt{p(1-p)\left(\frac{1}{25}+\frac{1}{88}\right)}$$

where $p = (18+62)/(25+88) = 0.708$. This gives a standard deviation of 0.103, which is much greater than the difference 0.015.

Table 3.1

Test for whether tariff concessions changed the EU export share for fish products

Row 1: Critical minimum for change in export share. Row 2: Number of products with a rising EU export share. Row 3: Number of products with a falling EU export share. Row 4: Share of products with a rising export share that got a tariff concession (s_1). Row 5: Share of products with a falling export share that got a tariff concession (s_2). Row 6: $s_1 - s_2$. Row 7: Standard deviation of $s_1 - s_2$.

0.05	0.04	0.03	0.02	0.01
25	28	31	33	39
88	91	94	103	112
0.72	0.643	0.581	0.545	0.462
0.705	0.681	0.660	0.602	0.554
0.015	-0.038	-0.079	-0.056	-0.092
0.103	0.098	0.095	0.090	0.083

From this it not possible to conclude that the tariff concessions had any significant effect on the EU export share for the products involved, contrary to what one would expect. As far as this goes, the tariff concessions had no effect whatsoever on the composition of the fish exports. In the next chapter we shall take a more qualitative approach to this question.

In the above analysis we have looked at changes in the export shares of the contemporary EU; that is, the post-1995 EC including the three EFTA countries that joined in 1995. It could be objected that we should have looked at the changes in the export shares of the pre-1995 EC, as the tariff concessions in the EEA Agreement should primarily have affected these countries, possibly at the expense of the countries that joined the Community in 1995. We have looked at this case as well. It turns out that the differences in export shares are always of the wrong sign, for all five critical values of a change in export share considered in Table 3.1; i.e, the proportion of products with an increase in export share which got a tariff concession is lower than the proportion of products with a fall in export share which got a tariff concession. The difference is statistically significant, but it would be imprudent to conclude that higher tariffs would promote the exports of the products involved.

4. A SPECIES BY SPECIES ANALYSIS

4.1 Cod

Figure 4.1 shows the Norwegian catches of cod and imports of fresh and frozen whole cod, defined as "supply". The supply reached a low point in 1990 of less than 200,000 tonnes but increased rapidly thereafter and exceeded half a million tonnes in 1994 – 97. After that a new downturn has begun. It is noteworthy that imports of fresh and frozen cod have increased from virtually nothing in 1988 to exceed 100,000 tonnes from 1992 onwards. Note that the imports have been inflated to fresh weight by adding 50%, as the imported fish is headed and gutted at sea. This is the adjustment factor used by the Directorate of Fisheries when calculating the fresh weight of headed and gutted fish.

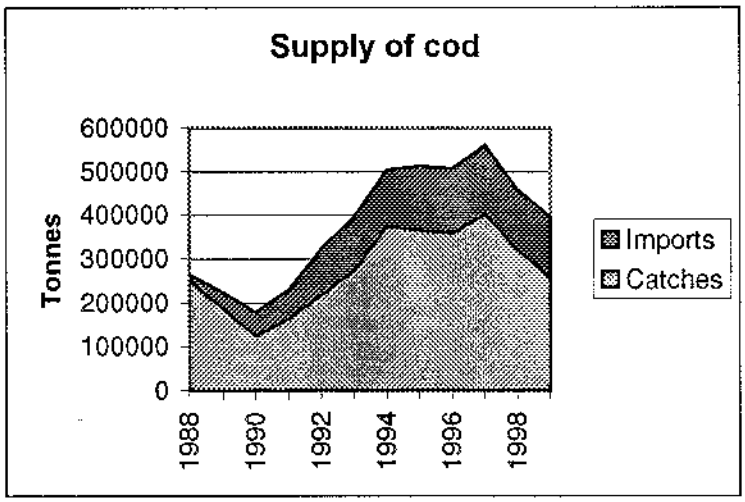
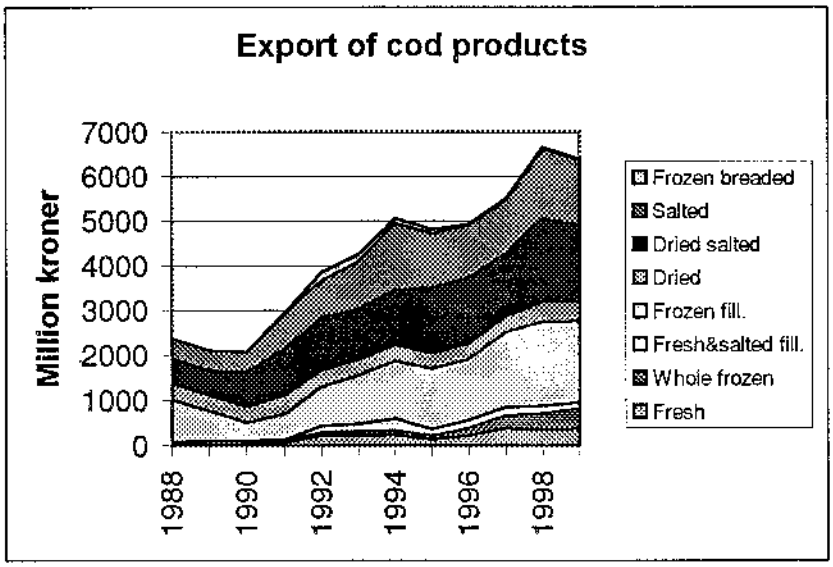


Figure 4.1

Figure 4.2 shows export of products derived from cod, in terms of value. Roughly one half of the export value consists of salted cod, both dried and wet, with frozen fillets accounting for about one third. These product types are still the dominant ones. Cod dried in the traditional way in open air has also roughly maintained its position, due mainly to the famous Lofoten cod, which is mainly exported to Italy. There has, however, been an increase in exports of fresh and whole frozen cod, and of fresh and salted fillets, even if the exports of the latter two are rather small. The export of breaded products, never very important, has faded into insignificance. The fact that this has also happened to breaded products made from other types of whitefish, to be discussed below, indicates that this is not a profitable operation in Norway.

Figure 4.3 compares the development of exported quantities of the various products with the development of supply of cod. Exports of frozen fillets have increased almost in tandem with supply, but slightly less rapidly. Exports of fresh fish, whole frozen fish and fresh fillets have increased much more rapidly than supply but are still, as stated earlier, of lesser significance. Exports of salted products, both wet and dried, have increased faster than supply while the export of dried cod has lagged behind. Salted and breaded fillets of cod started to appear in the export statistics in 1992

(previously they were included in broader categories). While the export of salted fillets has increased broadly in line with the supply of cod the export of breaded fillets has declined steadily.



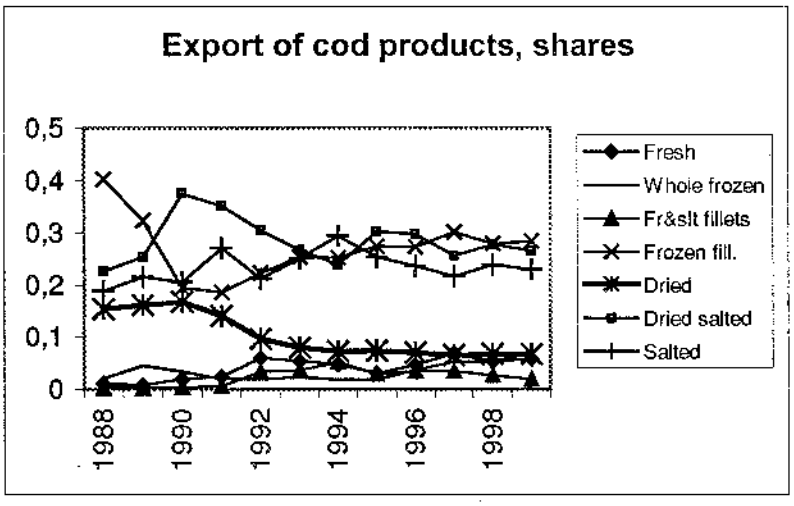
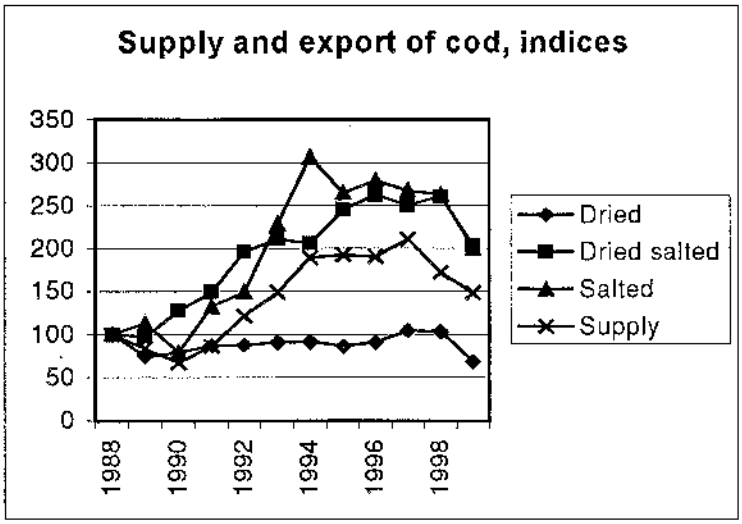
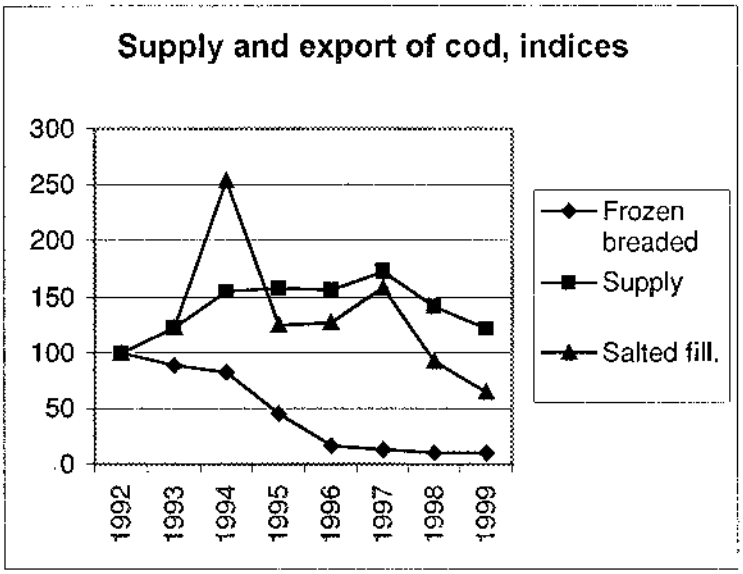


Figure 4.2

Exports of cod products. Breaded fillets are included with frozen fillets in the lower panel.

It appears that there has been a shift towards less processed products over time. Breaded products have almost vanished, and frozen fillets have lost some ground. Exports of fresh and whole frozen fish have increased substantially, but these are the least processed product types. There has, however, also been an increase in the exports of fresh fillets, which are a bit more processed form of product than whole, fresh fish, but these exports are still rather small.


Supply and export of cod, indices
350
300
250
200
150
100
50
0
1988
1990
1992
1994
1996
1998
Dried
Dried salted
Salted
Supply


Supply and export of cod, indices
300
250
200
150
100
50
0
1992
1993
1994
1995
1996
1997
1998
1999
Frozen breaded
Supply
Salted fill.

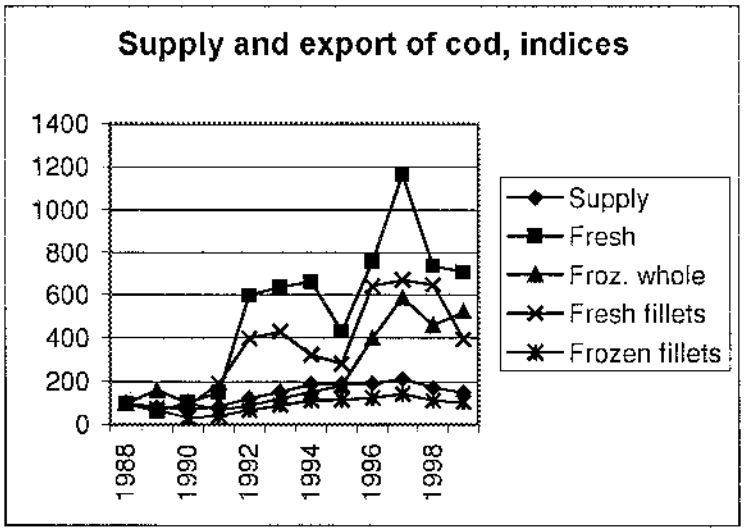

Supply and export of cod, indices
1400
1200
1000
800
600
400
200
0
1988
1990
1992
1994
1996
1998
Supply
Fresh
Froz. whole
Fresh fillets
Frozen fillets

Figure 4.3

The effect of the EEA Agreement

How the EEA Agreement affected the tariff applied to different cod products is shown in Table 4.1. The tariff reductions were to be applied either immediately (i.e., by January 1, 1993) or gradually in equal installments over five years, beginning in 1993. The 3.7 percent tariff for fresh and whole frozen fish applied to fish to be further processed in the European Community. For salted and dried products there was both a bilateral tariff free quota and a general, tariff free quota for which Norwegian exporters could compete. In addition, the Community did from time to time reduce its tariff for a certain quantity of wet, salted fish, both cod and other whitefish, in order to facilitate import for its own drying industry. The tariff reduction for salted and dried products was therefore much less in reality than it would appear from looking at the tariff rates before and after the agreement. At the margin, however, the tariff concessions are likely to have been similar to the nominal ones, as the tariff free quotas in most cases appear to have been binding. The tariff reduction was probably most significant for fresh and whole frozen fish and fresh and salted fillets, but less significant for other salted and dried products. For frozen fillets including breaded fillets the tariff reduction was hardly significant, especially for frozen fillets for which the tariff was reduced by just two percentage points.

Table 4.1

Tariff concessions given for different cod products by the EEA Agreement

Product	Pre-agreement tariff	Post agree-ment tariff	Implementation
Fresh and whole frozen	12/3.7	0	Immediately
Fresh fillets	18	0	Immediately
Other fresh fish flesh	15	4.5	Over five years
Frozen fillets	3	0.9	Over five years
Frozen portions	12	3.6	Over five years
Salted fillets	20/0	0	Immediately
Dried fish	13/0	0	Immediately
Dried salted fish	13/0	3.9	Over five years
Salted fish	13/0	0	Immediately
Frozen, breaded	3	0	Immediately

Since the quantity of cod that can be caught each year is largely given by the total catch quota agreed between Norway and Russia the effect of the tariff reduction would seem to be mainly one of changing the composition of exports. A tariff reduction for one particular product may under those circumstances be expected to stimulate the exports of that product at the expense of some other product, since the total amount to be exported is essentially given. Alternatively, the exports to the European Community could expand at the expense of exports elsewhere without changing the overall composition of exports. It is possible, however, that the tariff concessions stimulated an increase in exports beyond what could be sustained by the Norwegian cod quota. In the 1990s Norwegian boatowners began to buy Russian cod quotas on an annual basis, and Norwegian fish processors began buying large quantities of foreign caught cod, mainly from the Russian fleet. However that may be, to the extent the tariff concessions had any effect on exports they should have increased the share of the products most affected by the concessions and increased the

share going to the area primarily affected by these concessions, the pre-1995 European Community.

The development of exports after the EEA agreement was concluded seems largely to confirm the hypothesis that the exports of product types with large tariff concessions increased more than the supply of raw material. The exports of fresh and whole frozen fish have expanded faster than the supply of cod, and so have exports of fresh fillets. The exports of frozen fillets, which were only slightly affected by the tariff reductions, have increased less than the supply of cod or declined (breaded products). The exports of salted products have expanded, but prior to the EEA Agreement they used to exceed the tariff free quotas at disposal. But the picture is not entirely clear. Exports of fresh fish and fresh fillets had begun to increase prior to 1993 and increased quite substantially in 1992, and exports of salted fillets, significantly affected by the tariff reduction, have not kept pace with the supply of cod. Exports of dried fish, also affected by the tariff reduction, have trailed behind supply.

Did the tariff reduction increase the share of exports to the pre-1995 EC? The picture is not entirely clear. Almost all of the fresh fish and the wet, salted fish was exported to these countries prior to the agreement. This is still the case. Figure 4.4 shows the market share of the pre-1995 EC for four products. The share for whole frozen cod has declined, but the total quantity of cod exported to the pre-1995 EC has nevertheless increased significantly. The increase in the export of this product is therefore not just due to the EC tariff reduction; comparative advantage may also be at work here. It is also possible that some of the whole frozen fish is simply reexported; imports of whole frozen fish have increased from almost nothing since the late 1980s. The pre-1995 EC share for fresh fillets and dried fish has increased, pointing to a positive effect of the tariff reduction, while the share for dried salted cod has fluctuated without trend.

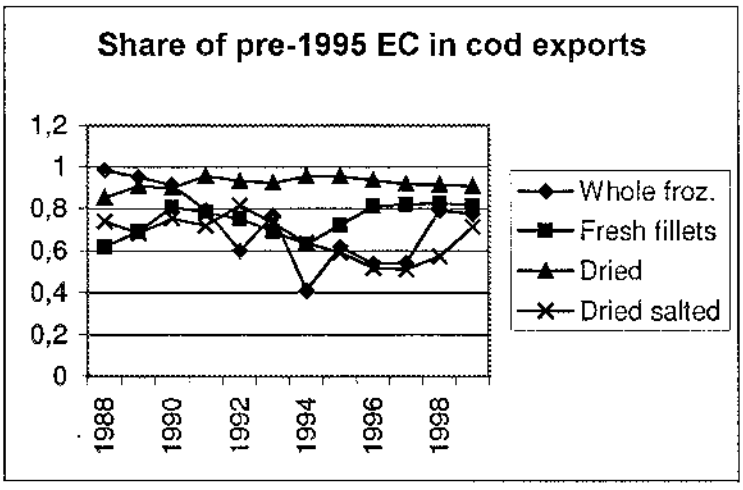


Figure 4.4

4.2 Other important whitefish

Other important types of whitefish are haddock, saithe, tusk and ling. Figure 4.5 shows the exports of haddock. Well over a half of the exports of haddock used to be

frozen fillets but the share of this product has been declining recently. Instead the export of fresh and whole frozen haddock has increased substantially and faster than total supply (Figure 4.6). Exports of salted haddock are insignificant.

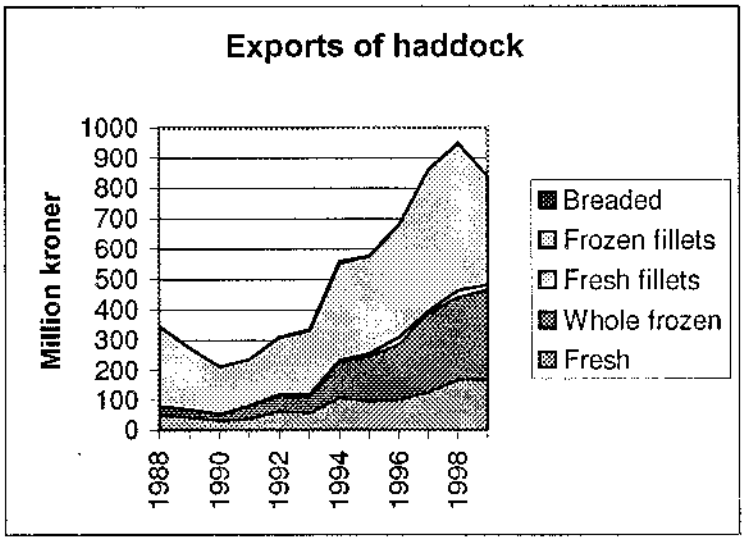


Figure 4.5

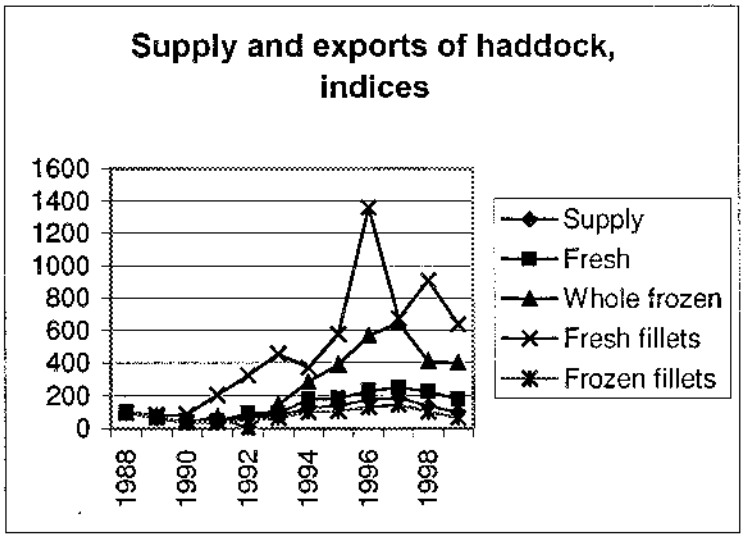


Figure 4.6

Most of the saithe is exported as frozen fillets and dried, salted fish (Figure 4.7). In recent years the share of both of these has been about equal, but before 1995 the share of frozen fillets was substantially higher. Figures 4.8 and 4.9 compare the development of exports with the supply of saithe. Exports of wet salted saithe and fresh fillets have increased much faster than the supply, and the same was true until recently of whole frozen saithe. In contrast with cod and haddock the exports of fresh saithe have not increased more than total supply. Dried salted saithe and, since 1995, frozen fillets have declined relative to supply.

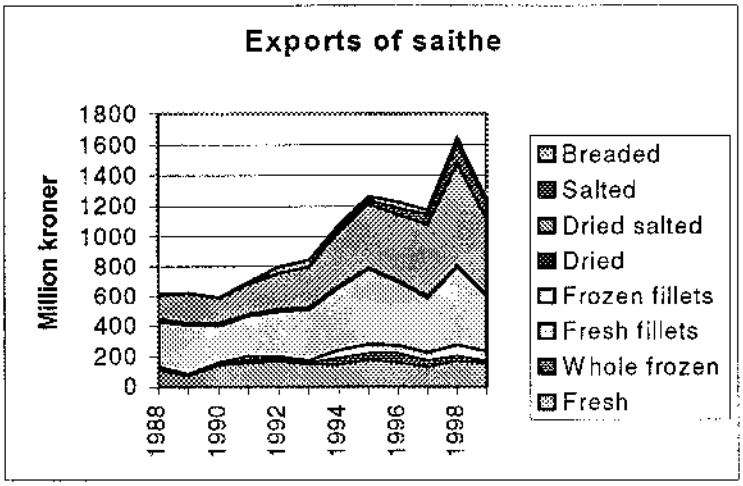


Figure 4.7

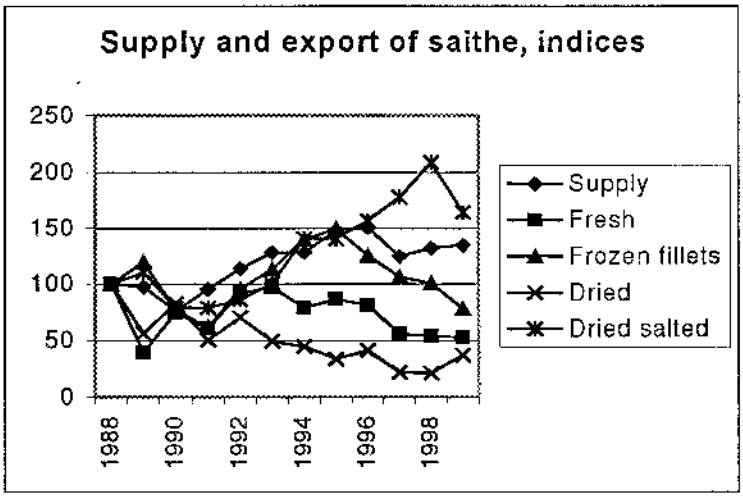


Figure 4.8

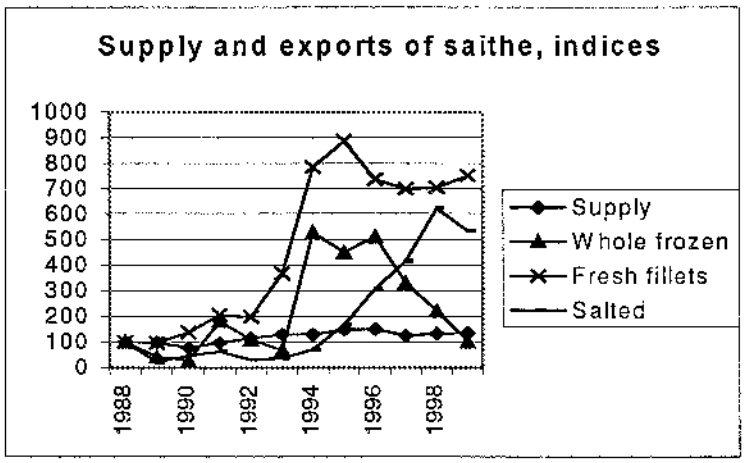


Figure 4.9

Ling and tusk are somewhat special, as they are mostly used for production of salted products. Figures 4.10 and 4.11 show the exports of these fish. Most of the fish is exported as dried and salted. Note that salted fillets were not recorded before 1992.

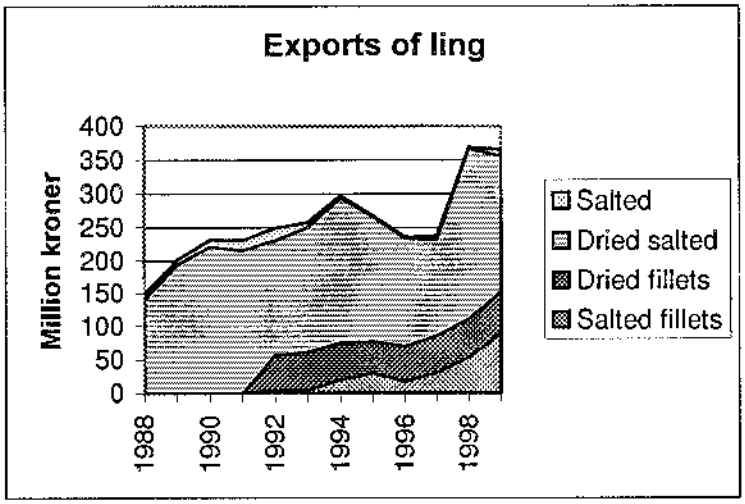


Figure 4.10

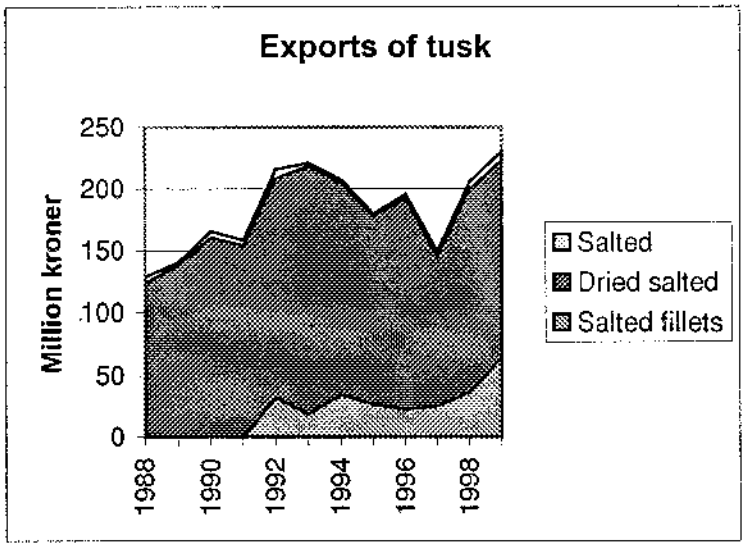


Figure 4.11

The effects of the EEA Agreement

The tariff reductions for these types of fish were similar to those for cod. The tariff changes are listed in Table 4.2. For these types of fish there were fewer tariff free quotas than for cod. The tariff reduction was most substantial for fresh, salted and dried fillets, followed by fresh and whole frozen fish, and then salted fish, while the tariff reduction for frozen fillets was only two percentage points, as for cod. The catches of saithe and haddock have been controlled by quotas but not the catches of ling and tusk. Nevertheless there is reason to expect that the tariff reductions would

lead primarily to changes in the composition of export for ling and tusk as well for the other two, as ling and tusk are probably fully exploited and possibly overexploited.

Table 4.2

Tariff concessions given in the EEA Agreement for products of haddock, saithe, ling and tusk.

Product	Pre-agreement tariff	Post agreement tariff	Implementation
Fresh and whole frozen saithe, had.	15/3.7	0	Immediately
Fresh ling	15	4.5	Over five years
Fresh fillets saithe, haddock	18	0	Immediately
Other fresh fish flesh saithe, had.	15	4.5	Over five years
Frozen fillets saithe, haddock	3	0.9	Over five years
Salted fillets	16	0	Immediately
Dried fillets	16	0	Immediately
Dried and dried salted	12	0	Immediately
Salted	12	3.6	Over five years

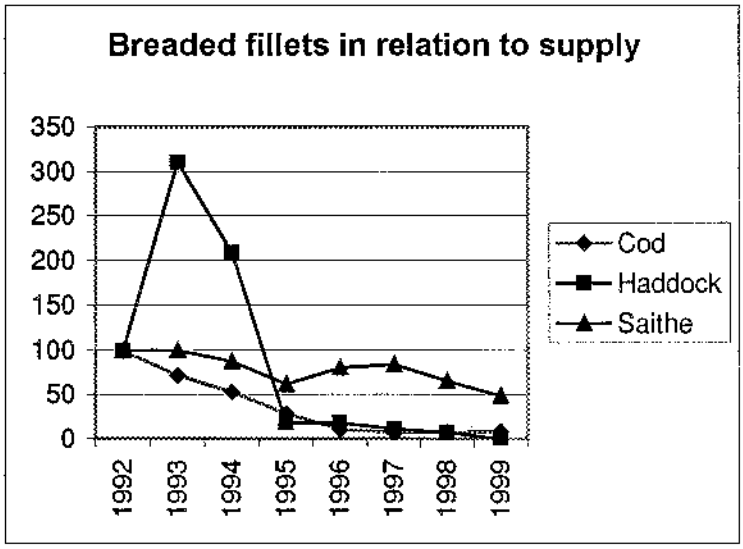
As for cod, the changes in the composition of exports of whitefish products are in broad agreement with what we would expect to happen as a result of the changes in tariffs. Exports of frozen fillets of haddock and saithe have declined relative to the supply of fish (there is little or no export of frozen fillets of ling and tusk). Exports of fresh, whole frozen, and fresh fillets of haddock have all risen. The picture is a bit less clear for saithe. The exports of fresh fillets has risen much more rapidly than the supply, but exports of dried salted saithe have risen less rapidly than exports of wet salted saithe despite the fact that the latter got a lesser tariff reduction. Exports of fresh saithe have increased less than the supply, despite a hefty tariff reduction. As for cod, the export of dried saithe has declined in relative terms despite the tariff reduction.

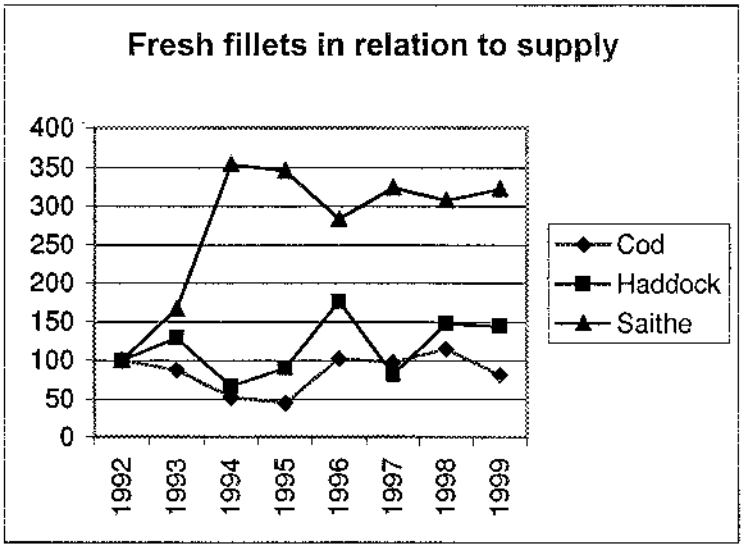
Most of ling and tusk is exported either dried or salted, and most of the dried, salted fish is exported to other countries than the European Union. The tariff reduction was about equally substantial for all products of these types of fish. The most important effect of the tariff reduction seems to be the increase in the export of salted fillets of ling. In Figure 4.12 we take another look at the development in the exports of whitefish fillets and compare it to the supply of unprocessed fish.[7] The export of fresh fillets of saithe has increased formidably since 1992, the first year that this product appears separately in the export statistics. Exports of fresh fillets of haddock have also increased while exports of fresh cod fillets have varied without a rising trend in relation to the total supplies of cod. Nevertheless fresh fillets are a very small share of total exports.

The exports of breaded fillets have had a dismal development for all three types of fish. The exports of breaded haddock fillets rose faster than total supplies in 1993-94 but have since fallen and in fact vanished altogether in 1999. Exports of breaded fillets of cod and saithe have declined uniformly. There is not much of an effect of

[7] The supply is defined in the same way as for cod. Identical development for supply and a particualr product implies an index of 100.

tariff reduction to be detected here, but the tariff for this product was in fact quite low prior to the EEA Agreement (only 3 percent).





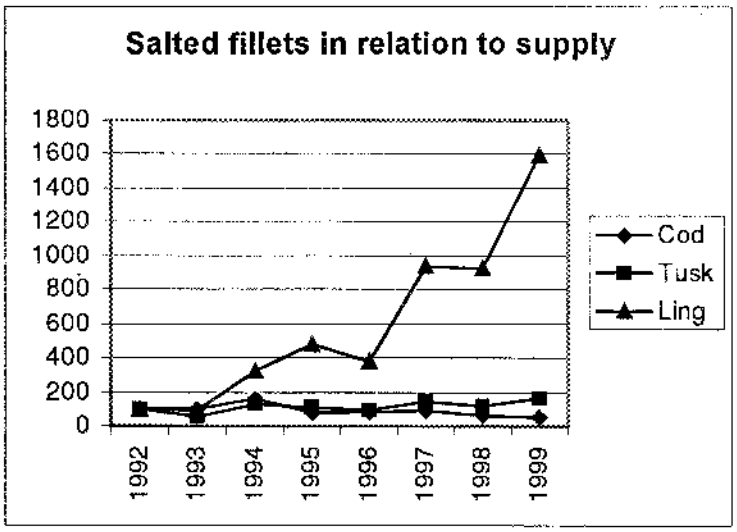


Figure 4.12

The export of salted fillets of ling have increased more than tenfold (the catches of ling have been rather stable over the period considered). This is most likely due to the reduction of the tariff by the EEA Agreement; not only has the share of the pre-1995 EC remained high, it has in fact increased in recent years, being over 90 percent since 1997. The exports of salted fillets of tusk and cod have fluctuated without much of a trend. Dried fillets of ling (not shown in the figure) have roughly kept pace with the supply of ling, but the export of this product to the pre-1995 EC is negligible.

4.3 Herring

Figure 4.13 shows catches of herring landed in Norway and the import of fresh and frozen herring. The catches rose steeply from 1992 to 1997, and imports became significant from 1996, reaching a level corresponding to about five percent of catches in 1999. We define catches and imports as supply of herring and add them tonne for tonne, as fresh and frozen herring is imported ungutted, in contrast to groundfish.

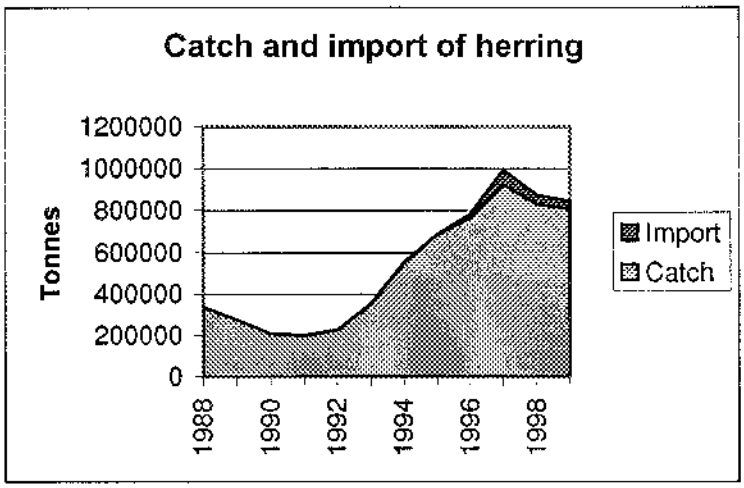


Figure 4.13

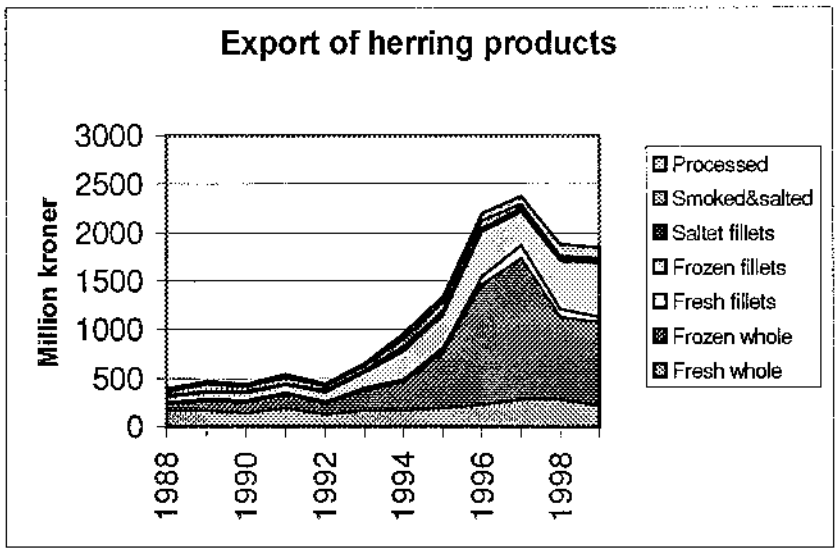


Figure 4.14

Figure 4.14 shows the development of exports, in terms of value. The increased supply of herring has mainly given rise to increased exports of frozen herring, both whole and filleted. Other product forms – fresh, processed, salted and smoked – increased much less significantly.

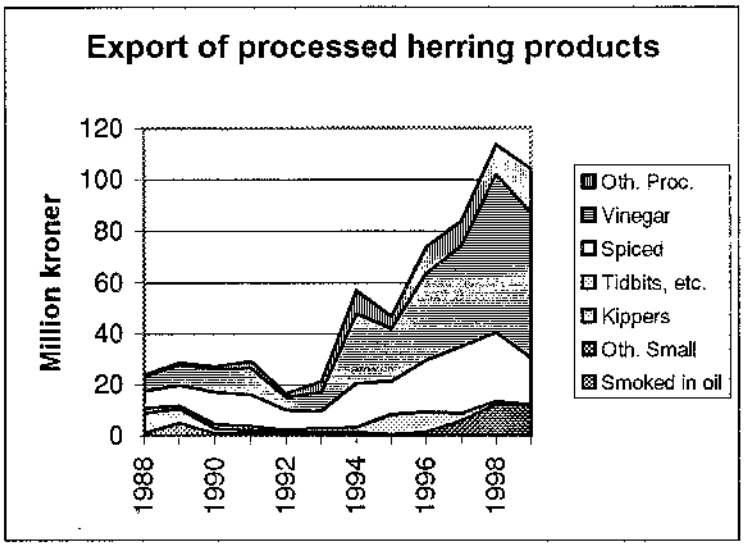


Figure 4.15

Even if processed products do not loom large in the overall export picture – they only comprised five percent of total export value in 1999 – they still grew impressively in relative terms, or more than fourfold over the period 1988 – 1999 (exports of frozen herring grew about tenfold over the same period) in terms of value. There is, however, a wide discrepancy between the different product types of processed herring, as shown in Figure 4.15. Exports of herring in vinegar, spiced herring, and the category "other small herring" grew impressively while others, such as kippers and tidbits, fell. The exports of kippers declined steadily from 1988 and disappeared in 1999, but in 1988 kippers accounted for the highest export value of all processed herring products. The export value of tidbits was more than halved from 1988 to 1999.

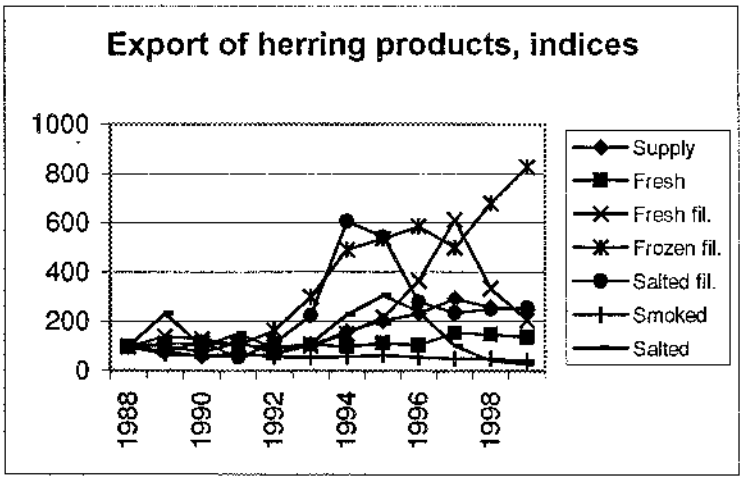


Figure 4.16

Figures 4.16 – 4.17 compare the development in the exported volume of various herring products with a volume index of supply of herring. Exports of fillets, fresh, frozen and salted, have increased more rapidly than supply, as well as whole frozen herring (not shown). Exports of fresh and smoked herring have risen less rapidly than supply or declined (smoked), while exports of salted herring show a somewhat rickety development.

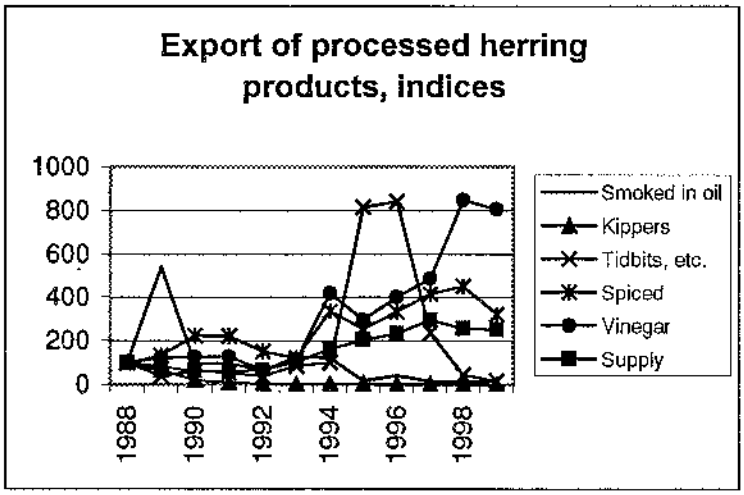


Figure 4.17

Looking at the processed products (Figure 4.17), the decline of kippers and smoked herring in oil or tomato sauce is conspicuous; both products have nearly or wholly vanished from the export spectrum. Exports of herring in vinegar and spiced herring have increased more rapidly than supply while the exports of tidbits has had a strangely rickety ride, with a sharp peak in the mid-1990s. The exports of tidbits were replaced by the category "other products of small herring" in the late 1990s, but tidbits are also derived from small herring.

Where did all the herring go? One question of concern in this paper is to what extent the tariff regime of the European Union constrains the export of Norwegian seafood to the member countries of the Union. In this context we would expect that the higher the EU tariff the less likely it is that the expanded exports found their way into the Union countries. To ensure a consistent definition of the "Union" over the period considered we restrict our attention to the pre-1995 European Community, labeled "EC".

At this point it is helpful to provide an overview of the EU tariff regime for the various herring products vis-á-vis Norway. This is done in Table 4.3. It should be noted that for some of the high tariff processed products there is a bilateral, tariff free quota, in part aimed at preserving exports to the EFTA countries that in 1995 joined the European Community and to which exports were tariff free.

Among the 14 products listed, six (fresh, salted, smoked, smoked in oil or tomato sauce, kippers, and tidbits) have either been stagnant or declined and so are of limited interest. This leaves us with eight products which exports have expanded. Figure 4.18 show the development of the exports of these products, both total exports and exports to the pre-1995 European Community. There is one clear trend in these figures; the

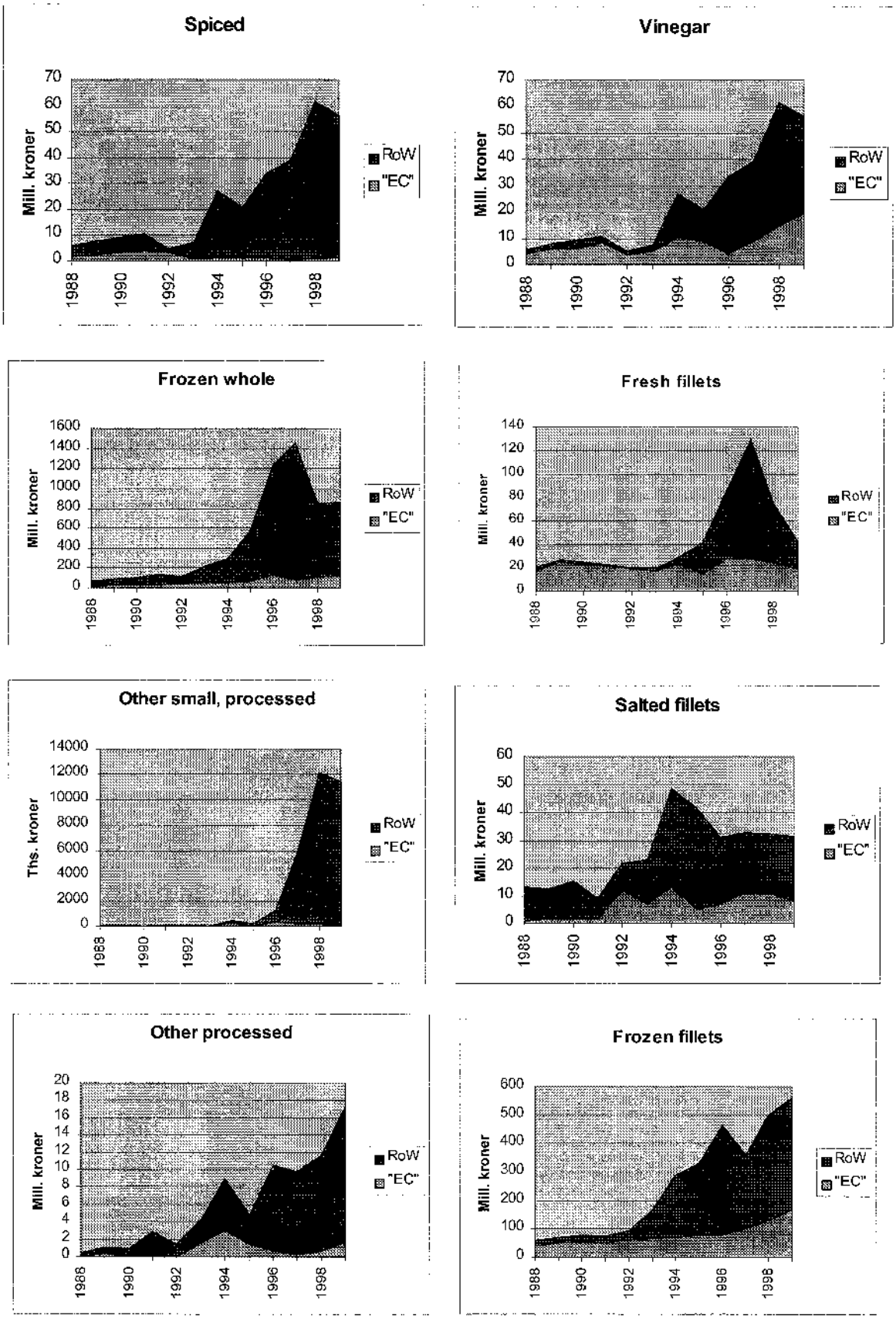


Figure 4.18

Exports of "expanding" herring products to pre-1995 EC and the rest of the world.

increased exports have gone mainly to countries outside the European Community. There is a certain tendency for the exports to the "EC" to have increased more the lower is the tariff rate; the exports of frozen and salted fillets to the "EC" have increased several times over while the exports of fresh fillets have not increased at all. But the picture is not clear; the exports to the "EC" of herring in vinegar, subject to a 20 percent tariff, has increased handsomely while the exports of "other processed products", which include breaded herring, which has a low tariff rate, have fluctuated on a slightly rising trend. The export of whole frozen herring to the "EC" has also increased, even if it is subject to a 15 percent tariff for the greater part of the year.

Table 4.3

EU's tariff regime for herring products from Norway

Product	Tariff regime
Fresh, not filleted	15 percent, but 0 February 15 – June 15
Frozen, not filleted	Same as above
Fresh fillets	Same as above
Frozen fillets	3 percent
Salted fillets	None
Smoked	10 percent
Salted	12 percent
Smoked, in oil or tomato sauce	20 percent
Other processed small herring	20 percent
Kippers	20 percent
Tidbits, etc.	20 percent
Spiced herring	20 percent
Herring in vinegar	20 percent
Other processed (includes frozen, breaded)	20 percent, but 3 percent for frozen, breaded

Two conclusions emerge from this. First, there is a certain, but still somewhat unclear, tendency for exports to the "EC" to have increased more the lower is the tariff. Second, exports of some highly processed products, in particular kippers, tidbits, and herring in oil or tomato sauce, have declined despite increased supply of raw herring. The products that have increased most are less processed products (frozen herring, both whole and filleted, and herring in vinegar).

4.4 Mackerel

Exports of mackerel products have increased more than fourfold since the late 1980s (Figure 4.19). Almost all mackerel is exported as whole frozen. The export statistics identify five product forms; fresh, whole frozen, fresh and frozen fillets, and processed mackerel. Fillets started to appear separately as late as 1997. Processed mackerel is listed in Chapter 16 in the tariff nomenclature, which does not distinguish further between product types. Canned mackerel would fall under this category.

The rise in the exports of mackerel is due in part to increased imports of fresh and frozen mackerel. In the late 1980s the import of mackerel was about two percent of the catch, but in 1998 and 1999 imports were almost as large as the Norwegian catch (more than 80 percent), cf. Figure 4.20.

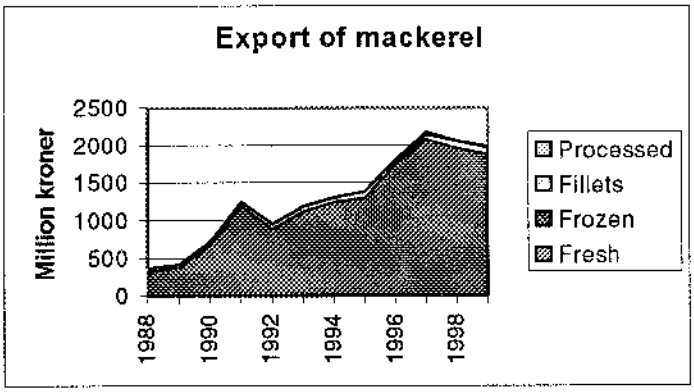


Figure 4.19

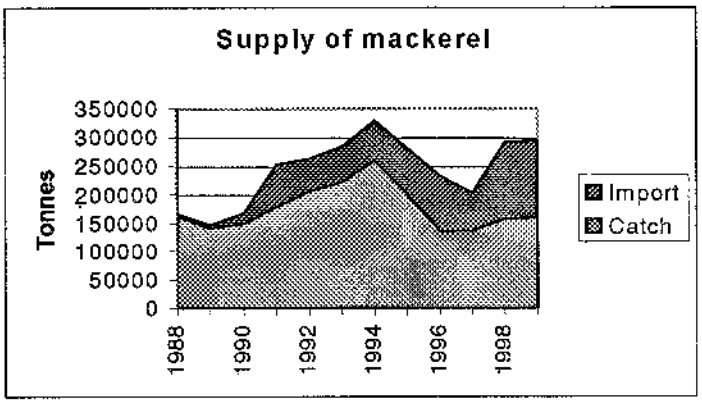


Figure 4.20

The exports of processed mackerel increased until 1995 but have fallen rapidly since then, both in absolute value and in relation to the total supply of mackerel (Figure 4.21). Exports of fresh mackerel have also declined in relation to the total supply. Clearly Norway has become a major importer of fresh and frozen mackerel, most of which is re-exported as whole frozen. Exports of fillets, both fresh and frozen, are still relatively small but increasing.

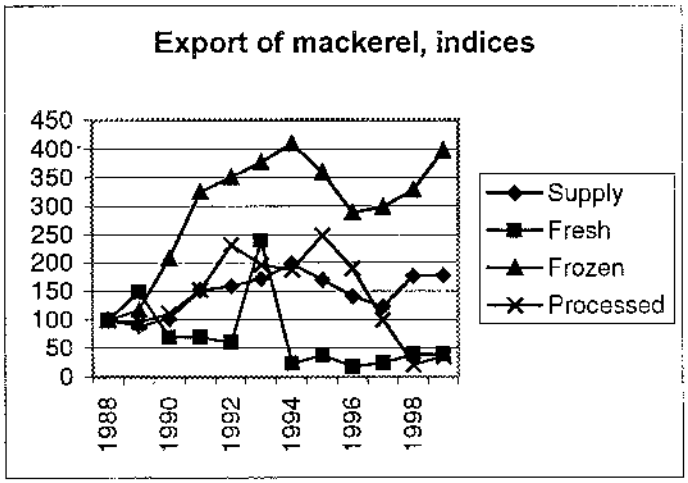


Figure 4.21

The share of the pre-1995 EC in the exports is for the most part small for all products other than fresh mackerel. Fresh and frozen mackerel can be exported tariff free in the period February 15 to June 15, which is off season for mackerel. Mackerel products were not affected by the EEA Agreement in 1992. Mackerel fillets are subject to a 15 – 18 percent tariff, and the tariff rate for processed mackerel is 25 percent.

Exports of processed mackerel to the pre-1995 EC have been erratic, both in terms of share and absolute quantities. The share of the pre-1995 EC has varied between 2 and 20 percent but shot up to 80 percent in 1999. Norway has a tariff free EU quota of 130 tonnes but the exports to the pre-1995 EC alone have often exceeded this. The fact that the EC export share for mackerel products is low, with some exceptions, indicates that the EU tariffs may hinder trade.

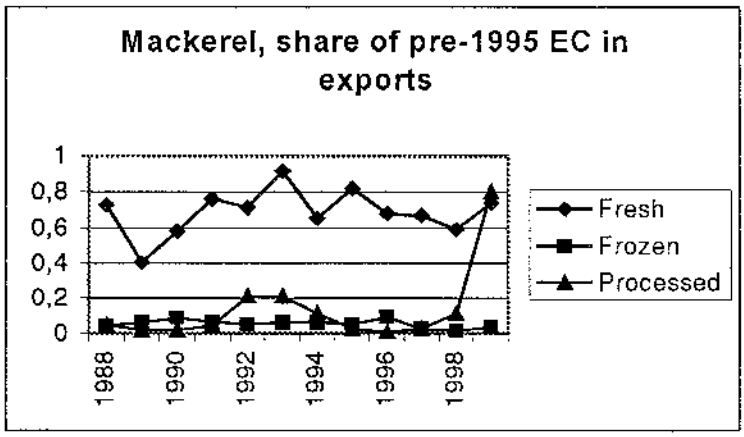


Figure 4.22

4.5 Shrimp

The export statistics identify seven product forms for shrimp; (i) frozen and raw, (ii) frozen and cooked but not peeled, (iii) other frozen, (iv) not frozen, (v) frozen and peeled, (vi) peeled in brine, and (viii) other processed. The three last ones are more elaborately processed than the first four and appear under Chapter 16 in the tariff nomenclature.

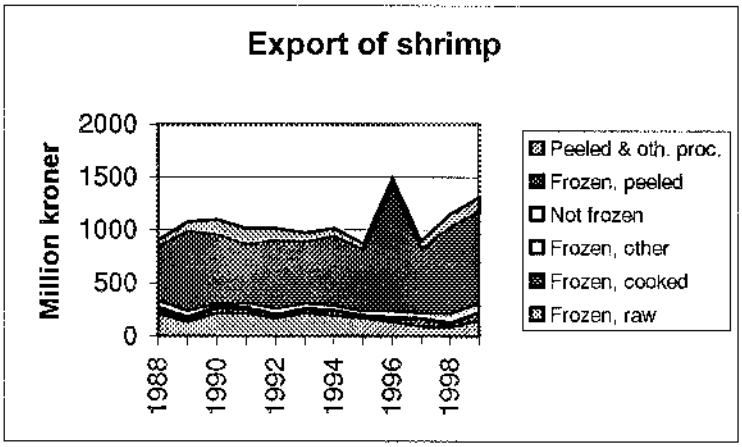


Figure 4.23

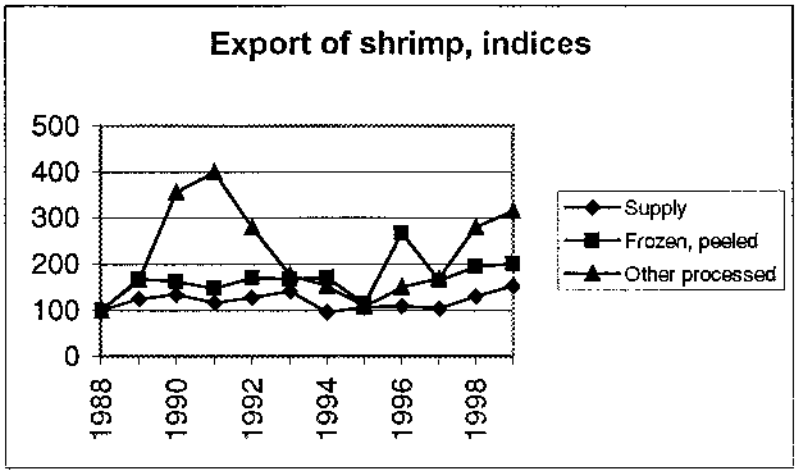


Figure 4.24

The export of these products is shown in Figure 4.23, with the last two being taken together, as they are not very important and have appeared separately in the export statistics only since 1992. If we define peeled and frozen shrimp as a processed product, the share of processed products has been well in excess of one half in all years, occasionally reaching as high as 80 percent. The exports of processed products have increased on par with supply or even more, as shown in Figure 4.24, but they have been somewhat volatile. It may be noted that the import of shrimp has been substantial, in 1993 the imports amounted to one half of the Norwegian catch, but usually they have been about one fourth of the catch (Figure 4.25). In imports we have included the three least processed categories (i) – (iii).

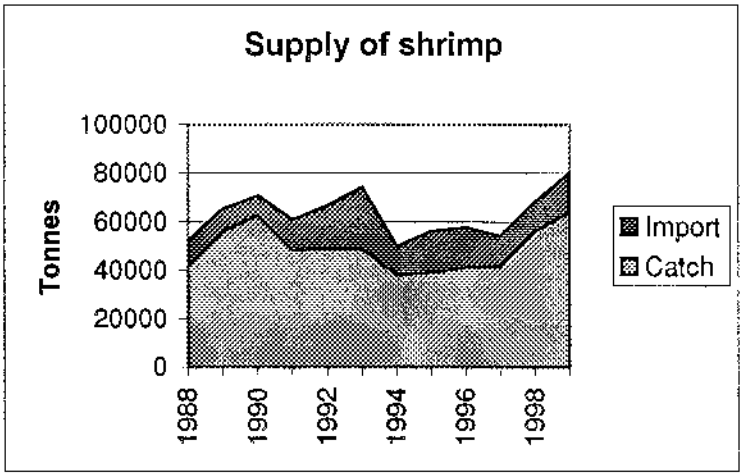


Figure 4.25

Shrimp products did not get any tariff concessions in the EEA Agreement and are among those which encounter the highest tariffs in the European Union, 12 percent for the less processed products (i) – (iv) and 20 percent for the processed products (v) – (vii). Nevertheless the share of the pre-1995 EC in the exports is by far the highest for the processed products; for frozen and peeled shrimp it has been well over one half in all years, but lower for the other two processed products. The pre-1995 EC

share has been below ten percent and occasionally as low as one percent for these latter two.

A possible explanation for the high share of the pre-1995 EC in the exports of frozen, peeled shrimp is that the tariff free quota that Norway enjoys has sufficed to accommodate these exports. This is not the case. The tariff free quota of 4500 tonnes granted in 1994 as a compensation for the entry of Sweden, Finland and Austria into the European Community has in most years been exceeded by the exports to the pre-1995 EC only. It is difficult to conclude with anything other than that the tariff barriers are not serious enough to impede exports of frozen peeled shrimp to the European Union.

4.6 Some other species and products

Trout

Prior to the EEA Agreement, a tariff of 12 percent was applied to exports of fresh and frozen farmed trout to the European Community. Exports of farmed trout to the Community were small compared with the exports of farmed salmon, for which the tariff rate was only two percent. This was often taken as an indication that high tariffs hampered exports of trout to the Community.

The EEA Agreement lowered the tariff on fresh and frozen farmed trout to 3.6 percent, phased over five years beginning in 1993. The exports of fresh farmed trout have been highly erratic, but since 1995 there has been a substantial increase in the export of frozen farmed trout (Figure 4.26). Most of this increase has been to countries other than the European Union, however, and the market shares of the pre-1995 EC have not increased. The tariff reduction thus does not appear to have had much effect.

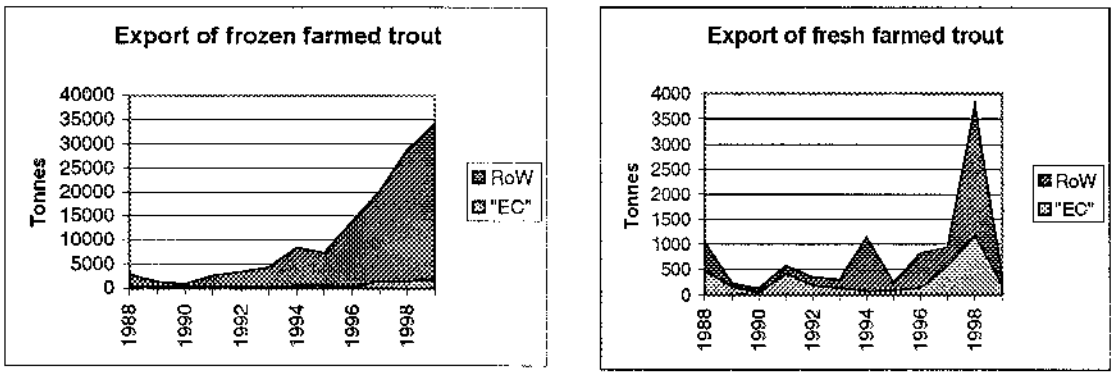


Figure 4.26

Export of farmed trout to the pre-1995 European Community ("EC")and the rest of the world (RoW)

Halibut

Halibut, including Greenland halibut, is mostly exported either fresh or whole frozen. Before 1993 the tariff rate applied by the EC to these products was 8 percent. The tariff was abolished by the EEA Agreement. Since virtually all exports of these types of fish were affected by the tariff reduction the main effects of this change should have been an increase in the export share of the pre-1995 EC. There has been a tendency in this direction, particularly for fresh halibut, but less so for frozen halibut (Figure 4.27). The tariff reduction may have led to an increase in supply of halibut, which is not under quota. The catches of Greenland halibut are regulated by quotas, so little in the way of stimulus of supply is to be expected. The total exports of Greenland halibut have for the most part remained steady (Figure 4.28). The share of the pre-1995 EC in the exports of Greenland halibut has remained about 90 percent for fresh fish but fallen for frozen fish. The share for frozen fillets has increased but they were not much affected by the EEA Agreement, which reduced the tariff rate from three percent to 0.9 percent, as for other frozen whitefish fillets.

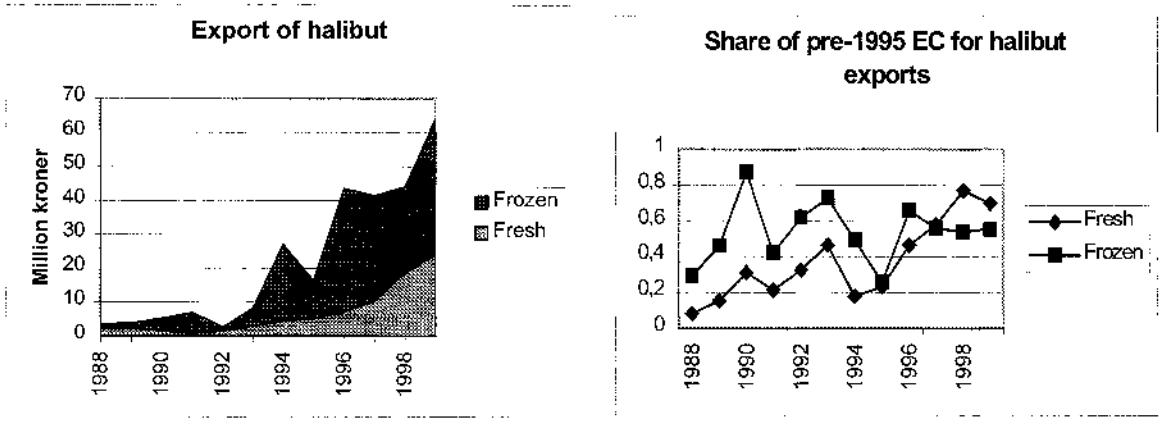


Figure 4.27

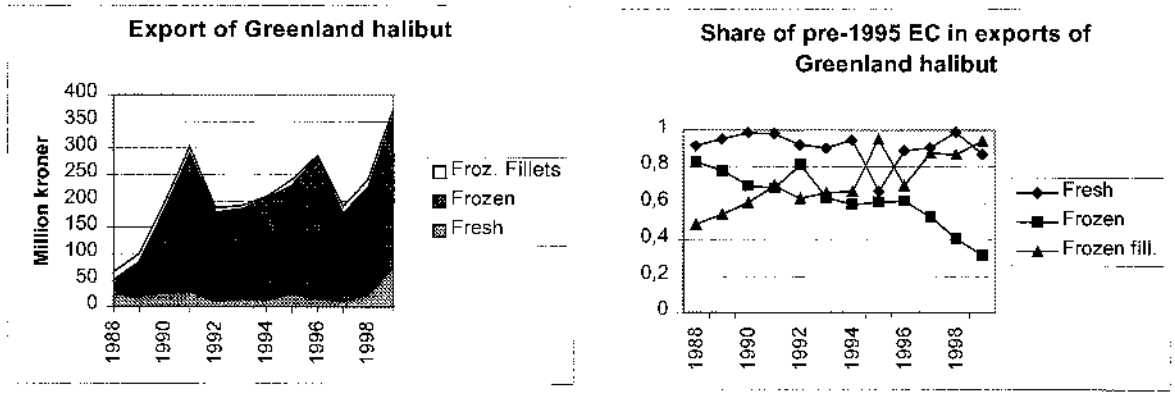


Figure 4.28

At the time the EEA Agreement was concluded the main expectations with respect to the effect of these tariff reductions concerned farming of halibut and cod, which were expected to take off. These expectations have not materialized. The amount of farmed

halibut produced in 1998 was less than 300 tonnes, and the amount of cod still less. The total amount exported of fresh and frozen halibut in 1998 was almost 1300 tonnes.

Oysters

The EC tariff for oysters was 18 percent before 1993, but the EEA Agreement reduced it to 5.4 percent over five years. This was expected to stimulate the farming of oysters and exports to the EC countries. As Figure 4.29 shows, the export of oysters declined precipitously in 1992-93 and has not recovered. The share of the pre-1995 EC has in fact declined.

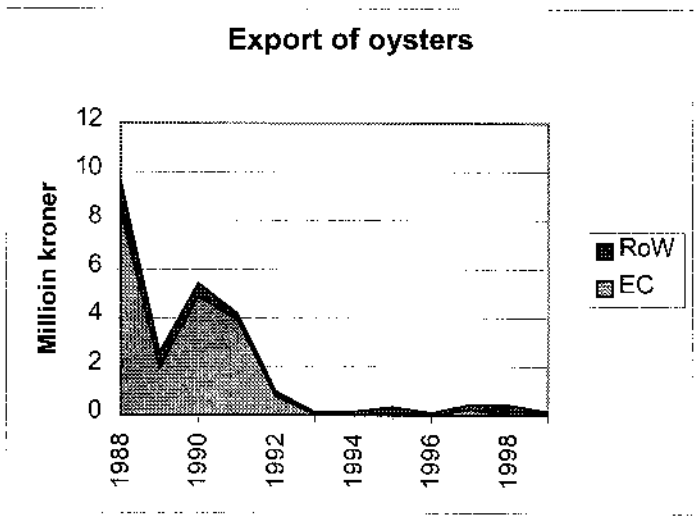


Figure 4.29

Exports of oysters to the pre-1995 EC and the rest of the world.

Mussels

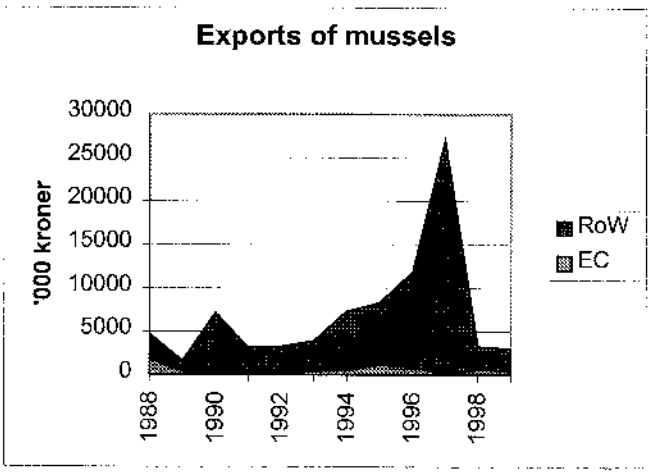


Figure 4.30

Exports of mussels to the pre-1995 EC and the rest of the world.

Before the EEA agreement the tariff on mussels was either 8 or 10 percent, depending on whether they were of the species *Mytilus* or *Perna*. These rates were lowered to 3 and 2.4 respectively, phased over five years. These tariff reductions were expected to lead to an increase in farming and exports of mussels. There was indeed a major increase from 1993 – 97 but a precipitous fall thereafter (Figure 4.30). Most of this increase was absorbed by countries outside the European Union.

False caviar

One product for which the tariff was abolished by the EEA Agreement was false caviar. The tariff on this product was 30 percent and was considered an effective barrier. At the time the agreement was concluded this product was exported mainly to countries other than the pre-1995 EC (see Figure 4.31). The expectation at the time was that there would be a significant increase in exports to these countries as a result of removing this high tariff. This has not happened. Exports of false caviar did increase for a few years after 1992, but mostly to countries other than the pre-1995 EC.

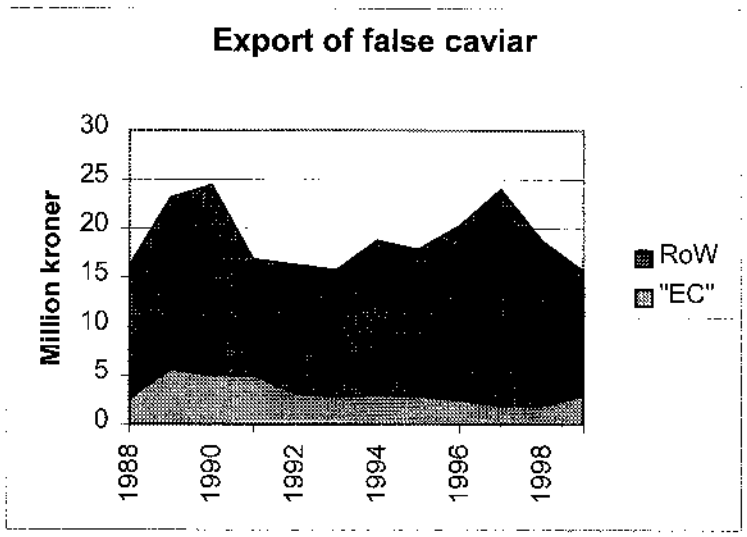


Figure 4.31

Export of false caviar to the pre-1995 EC and the rest of the world.

5. CONCLUSION

In this note we have looked at the composition of Norway's fish exports. These exports are dominated by unprocessed or only lightly processed products, and they seem to have become more and not less so over the last decade. Breaded fillets, never important, have virtually disappeared. The most important tendency in the opposite direction is that dried salted fish has kept its position and that the export of fresh and salted fillets have increased substantially. This indicates that the greatest value of the fish, when all costs are counted, does not lie in highly processed products but in fresh products, possibly treated so as to be easily accessible for the consumer.

The examination of the consequences of the EEA Agreement indicated that the effects have been minor. A statistical analysis of the change in market share for over a hundred products did not show any significant positive effect of the tariff reductions. Looking at individual fish species and products, we found that for some types of fish the composition of exports has changed in the direction one would expect, but these changes are not dramatic. Some tariff reductions do not seem to have had any effect at all or even the opposite of what one would expect; in cases where lower tariffs could be expected to lead to increased production and exports (farmed trout, false caviar, farmed oysters and mussels) this did not happen. Rather than conclude that tariff reductions result in lower exports it is probably prudent to say that other causes have been at work, neutralizing whatever positive effects there might have been from the tariff reductions.

The evidence of high tariffs being a barrier for Norway's trade in fish and fish products with the European Union is thus mixed. The EU share of Norwegian exports is quite high for some products that face high tariffs. This is one reason why the lowering of these tariffs would not have a dramatic effect on the composition of trade.

The EEA Agreement was presented at the time of its conclusion with much fanfare, due probably to the political situation at the time, with Norway's entry into the EC pending. The effects of the treaty have turned out to be minor. Is lowering the remaining tariffs on fish products exported to the Union therefore not a cause worth fighting for? That conclusion would be stretching things a bit too far. It is quite possible, and indeed likely, that the lowering of the EU-tariffs has raised the prices obtained by Norwegian exporters and so improved the profitability of the firms involved. It is not possible, however, to investigate that problem with aggregated data such as the ones at hand.