

Will a Norwegian EU membership be a benefit for Lerøy Seafood Group ASA?

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Summary

Lerøy Seafood Group ASA (LSG) is based in Bergen and is one of Norway's largest exporters of fish. LSG operates companies worldwide, both inside and outside the EU. The company has been growing strongly over the last three decades, with revenues up from approximately 100 million NOK (Norwegian kroner) in 1980 to 6057 million NOK in 2008. Sales to the EU area represented 58.2 percent of total sales in 2008. Salmon is LSG's most important product and represents approximately 70 percent of the company's total revenues.

Norway is member of the EEA agreement, which brings together the 27 EU members and the EFTA countries (excluding Switzerland) in the "Internal Market." However, the EEA Agreement does not cover the EU's Common Fisheries and Agriculture Policies, which implies that the trade of fish does not move freely. A Norwegian EU membership would imply a full entry into the "Internal Market" and a complete removal of all tariffs.

The first part of our analysis examines whether tariffs on Norwegian fish exports are an important trade barrier. The empirical analysis aims at discovering whether the products that received a tariff concession in 1993 have increased their EU share of total Norwegian fish exports. Our findings illustrate no significant correlation. There are clear limitations to our study, but this finding indicates that EU membership is likely to have a minor effect with respect to a removal of tariffs. Other research both supports and opposes our findings, a fact that undeniably illustrates the complexity of this issue.

In our discussion, we find that a change in FTA agreements due to a Norwegian EU membership seems to be of limited importance. Antidumping countermeasures and minimal prices forced by the EU have primarily harmed EU consumers. The industry might have gained an economic rent because of a price markup, but on the other hand, the industry could also have experienced increased economic risk and prevented a full utilization of its competitiveness. Interviews with shareholders indicate few trade limitations, but do indicate unnecessary transaction costs due to minimal prices. Furthermore, the compensation quotas Norway received when former EFTA countries joined EU will to very little extent reduce the potential gains from tariff removals. EU membership will result in reduced protectionism of the agricultural industry and thus cheaper food in Norway. This implies that in the home

market, LSG could face increased competition from cheaper agricultural products, but on the other hand, LSG could benefit from an increase in consumers' real purchasing power.

If EU membership will change the export structure for Norwegian fish exporters, an important question is whether LSG will be able to defend or increase its export share. Market dynamics suggest more benefits than drawbacks for a large and experienced fish company like LSG. Marketing activities provide little information on how LSG will be affected by EU membership, but product differentiation may increase.

Poland entered the EU in 2004 and went from being a third country with a bilateral trade agreement with the EFTA to being a part of the EU tariff union. Poland hence became a strategic place to process fish, and it is currently the most important processing country for Norwegian salmon. Ever since Poland's accession, there has been a steady increase in Norwegian fish exports in terms of both quantity and value.

Our thesis does not indicate clear benefits of a Norwegian EU membership for LSG. The explanation behind this conclusion is that trade barriers are currently limited, Norway is dominant player in the EU salmon market, and through the EEA agreement, Norwegian fish exporters are already benefitting from free movements on inputs without membership. Turning to the opposite question, whether EU membership will be an overall drawback for LSG, we find few negative aspects.

Preface

In times of financial crisis, globalization and economic integration take on an increased significance in the political arena. Employees fear unemployment, shareholders fear loss of capital, and politicians fear loss of power. To shore up their positions, politicians typically utilize tools of protectionism.

If protectionism is instituted as the cure for the current global economic crisis we are witnessing, we risk the danger of intensifying the gloomy economic outlook of today and tomorrow. Yet for all the economic pain and insecurity, the social and political fallout from the current crisis has not yet yielded any strong evidence of trade protectionism. The EU has reintroduced export subsidies for some dairy products, India has raised some steel tariffs, and Russia has raised import duties on vehicles, but there has also been movement in the other direction. In Europe, we find that Eastern Europeans have become even keener on the shelter of the euro, Iceland may apply for EU membership, and the Irish are more likely to vote for the EU's Lisbon treaty than they have been in the past.¹

Some industries are more exposed to international economic environment than others. The Norwegian fish industry is highly internationalized, and more than 90 percent of the product value comes from exports. The fish industry is also one of Norway's largest export industries, and an industry that puts Norway on the world map. Consequently, the fish industry is one that comes into focus in discussions of liberalization or the protection of international trade.

This paper should be of interest to Lerøy Seafood Group ASA and others involved in the fish industry, but also for those with a general interest in international trade, globalization, and economic integration.

First and foremost, we would like to thank our supervisor, Siri Strandenes. We are also grateful for Rögnvaldur Hannesson's advices regarding the quantitative analysis. Finally, we want to thank Frank Asche, Kontali Analyse AS, and Ole, Helge and Arne Møgster for their valuable input.

¹ The Economist, "Turning their backs on the world," February 21-27, 2009.

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1. Question and structure

This thesis on the Norwegian fishing industry and the effects of a Norwegian EU membership is first and foremost motivated by the authors' interest in the academic and political field of globalization and economic integration.

Looking at Norway's major industries and how exposed they are to international trade agreements, the fish industry clearly stands out. Norway is one of the world's largest fish exporting countries, and fish is the third-largest export industry in Norway (www.ssb.no). Moreover, the EU is a huge market, and more than half of the value of Norwegian fish is exported to the EU. If we include Eastern European countries outside the EU², Europe amounts to three-fourths of Norway's market for fish exports (www.seafood.no).

Because of Norway's rich access to resources in the sea, it is common to assume that Norway would benefit from reduced trade restrictions by joining the EU. Norwegian economists have closely studied how changes in world trade agreements impact the Norwegian fish sector on the industry level. However, to our knowledge, no scholarly papers have been devoted to the specific consequences for individual firms. The reallocation of economic resources due to changes in trade agreements also affects companies, but the various strategies and positioning of the individual companies determine outcomes for the firms in different ways.

There are several reasons why an up-to-date discussion related to an individual company's trade of fish between Norway and the EU will be valuable. First, because of the current economic crisis, it is likely the current landscape of trade agreements will be changed. Second, the EU is Norway's most important trading partner, particularly in the fish industry. Third, new countries such as Iceland (and perhaps even Norway) are likely to join the EU in the future. And finally, we believe that focusing on a company will provide a specific example of how the liberalization of trade can create or destroy value.

² This includes Russia, Belarus, Moldova, Albania, Bosnia Herzegovina, Kosovo, Croatia, Macedonia, Montenegro, Serbia and Turkey (www.seafood.no).

Thus, we have decided to take a closer look at the trade of fish between Norway and the EU, and to analyze the effect of a potential Norwegian EU membership from the perspective of the Norwegian fish producer and distributor, Lerøy Seafood Group ASA. The main question of our thesis is therefore: “Will a Norwegian EU membership be a benefit for Lerøy Seafood Group ASA?”

The thesis is based on public information with exception of interviews with the Møgster family. In order to answer our question, we shall:

- 1) Describe the present situation of Lerøy Seafood Group ASA, its operations, and how the company is affected by EU trade agreements.
- 2) Evaluate whether EU membership will be a benefit for Lerøy Seafood Group ASA based on an empirical analysis, discussion, and a presentation of descriptive statistics.

1.1 Structure

The structure of our thesis is as follows:

Chapter 2 gives a general description of the fish industry in order to make the reader better acquainted with the context of this thesis. This includes a section on fish as an internationally traded commodity and an overall picture of the world market of fish. We also describe Norway as a fishery nation with a look at history, market position, politics, and aquaculture.

Chapter 3 presents Lerøy Seafood Group ASA, with an insight into the company as a foundation for understanding the analysis in Chapters 7 and 8. The chapter includes a description of Lerøy Seafood Group ASA, with a look at its present state, history, development, business goals and strategy, business overview, and market overview.

Chapter 4 highlights the most important trade agreements affecting the Lerøy Seafood Group’s sales to the EU market. In this chapter, we will first present the European Union, its purpose and trade policies. Then we will describe the EFTA and EEA agreements, which are key factors for the

terms of trade between the EU and Norway. Finally, we present the WTO/GATT agreement, a global agreement/organization which sets the ground rules for all trade agreements.

Chapter 5 introduces the theory that is relevant for the analysis in Chapters 7 and 8, and the methodology relevant for Chapter 6. First, we give a definition of economic integration and present the most important aspects of standard trade theory and new trade theory. We then illustrate the effects of tariffs and the effective rate of protection, as well as non-tariff barriers to trade. Finally, we set forth a presentation of the methodology used in the empirical analysis in Chapter 6.

Chapter 6 covers the empirical analysis of the consequences of tariff concessions granted Norway by the EEA agreement of 1994. The analysis is used as a guideline to assess the effect of a complete removal of tariffs with the EU. The chapter illustrates some typical tariff reductions from the EEA agreement, a description of the analysis, findings and results, as well as limitations of the study.

Chapter 7 includes a discussion of how Lerøy Seafood Group ASA may be affected by a Norwegian EU membership. First, we further discuss the effect of a tariff removal, with a look at free trade agreements and the establishment of Lerøy Seafood Group ASA inside the EU. Next, we analyze the role of non-tariff barriers to trade, focusing particularly on minimum import prices (MIPs) and compensation quotas. The chapter also illustrates possible changes in income and prices, and how access to resources may change with EU membership. Finally, we look at other factors such as input intensity, infrastructure, and exchange rates.

Chapter 8 discusses how market dynamics and marketing activities can determine how LSG will be affected by a Norwegian EU membership if the export structure of Norwegian fish exports changes. With respect to market dynamics, we examine the difference between large and small firms, established and new firms, and economies of scale and scope. As for marketing activities, we investigate the role of product differentiation, country branding, and market knowledge in the fish industry.

Chapter 9 presents descriptive statistics of structural changes in Norwegian fish exports to Poland. Poland entered the European Union in 2004, and we therefore focus on the changes in Norwegian fish exports to Poland before and after Poland's accession. This chapter is not

directly related to the question of our thesis, but it is included to augment the understanding of how Norwegian fish exports are affected when new countries join the EU.

Finally, **Chapter 10** contains the conclusion, while **Chapter 11** and **Chapter 12** contain the bibliography and appendix.

2. Context

The context of this thesis is the liberalization of trade in the fish industry. The following chapter presents information with the intention of making the reader better acquainted with the fish industry.

2.1.1 Fish – a global product

Fish is a commodity which is traded among almost every country in the world, with 200 importing countries and 190 exporting countries. Global fisheries and aquaculture supplied the world with about 110 million tons of fish for consumption in 2006. 37 percent of the world's total production of fisheries and aquaculture was exported, verifying fish as an important food and feed commodity. The production of captured fish has been quite stable over the last decade. It looks like the market for captured fish is reaching its limit. The potential for future growth lies in aquaculture, which is growing more rapidly than all other animal food producing sectors (www.fao.org).

2.1.2 The world fish market

The most important trends for current fish consumption are increased demands for convenience and healthier food. Changes in lifestyle have triggered consumers' demand for food products that are easy to prepare, which are often referred to as convenience products (little or no preparation and served in minutes). Healthy eating, prompted by an increased awareness of health and/or food crises, is another trend that is driving demand (Failler 2007).

World per capita consumption of fish and fishery products has risen from a 1970s average of 11.5 kg to 14.8 kg in the 1990s. Consumption in the 21st century continued to grow to an average of 16.4 kg per capita for the 2001-2003 period. The consumption per capita further increased from 16.8 kg in 2006 to 16.9 kg in 2007 (www.fao.org).

EU is the world's biggest market for fish. This is reflected by growing domestic consumption, but can also be explained by the recent EU expansion to 27 countries. In 2006 the EU imports of fish was 38 billion USD, or 42 percent of total world imports. These statistics also include trade among the EU countries. If this trade is excluded, the EU imported fish for a total value of 20.7 billion USD. This represents 23 percent of world imports and makes the EU the largest market in the world (www.fao.org).

Consumption among the EU countries varies greatly, with Portugal, Spain, Finland, and France consuming the most. In 2005, consumption per capita for these countries was 60 kg, 40 kg, 35 kg, and 32 kg, respectively. Eastern European countries such as Slovenia, Hungary, Bulgaria, and Romania consume the least, and in 2005, their consumption per capita was 7 kg, 5 kg, 3 kg, and 3 kg, respectively. The average consumption of the 27 EU member countries was 22 kg, which is significantly higher than world average consumption (approximately 16.5 kg in 2005). Estimations show that the European demand for fish will increase to 24 kg per capita by 2030, which amounts to a 2 kg increase, or 9 percent. Factors behind this future increase include, in addition to the trends explained above (convenience products and healthy eating), the growing availability of seafood in supermarkets and an improvement in the economic situation of new EU members from Eastern Europe (Failler 2007).

2.1.3 Norway – a fishery nation

Norway's geography gives the country natural endowments for utilizing the ocean's resources. Norway has a very long coastline of 25,148 km, many fjords which are ideal starting points for harvesting the oceans resources, and a continental shelf in the North Sea which is four times larger than the mainland. These geographical factors give this relatively small country vast access to resources and a natural competitive advantage in the fish trade (www.ssb.no).

A brief history

The fish trade has been important in Norway throughout the country's history, and as early as the 18th century, Norway was exporting large amounts. International trade has been important for Norway's economic growth for centuries, and in 1860, half of Norway's GDP was import or export. The growth of fish production in the 19th century was not related to technology, but instead was labor-orientated. Population growth and organizational changes contributed to an increasing number of fishermen. Throughout the 20th century, there was a steady improvement of technology in the industry, which led to significant structural changes with higher capital intensity, resulting in larger firms and more professional organizations (Hodne and Grytten 2001). Fishing is today the core industry in many rural areas along the Norwegian coastline and vital for the economic development in these regions (www.ssb.no).

Norway's current position

Norway is the world's second-largest seafood exporting nation, with exports valued at 39.1 billion NOK. Norway ranks as the 12th-largest seafood supplier, at 3.0 million tons. With 506 Norwegian fish exporters and customers in 132 countries around the world, these seafood exports provide direct employment for 28,000 Norwegians (www.seafood.no).

The EU is Norway's most important market for seafood; with an export value of 23.2 billion NOK in 2008, this represents 59 percent of Norwegian fish exports. It bears noting that growth in Eastern Europe is important for Norwegian exporters. France is the most important market for Norwegian seafood, with Russia close behind, followed by Denmark and Poland (www.seafood.no).

In 2008, slightly more than half of exports come from aquaculture (see Aquaculture below). Exports of wild-caught seafood totaled to 18.9 billion NOK (www.seafood.no).

Politics and political issues

Overfishing and natural changes in the fish stocks have been a part of the North Sea fisheries' history. The fundamental problem of fisheries management is twofold, as it has to

take into account both the conservation and the exploitation of the resource base (Bjørndal et al. 2004). To secure a sustainable development of the living resources in the North Sea, the Norwegian Ministry of Fisheries and Coastal Affairs has worked out plans, regulations, and laws for the fishing industry. Fishermen and their vessels have to be registered and licensed by the Ministry of Fisheries and Coastal Affairs (www.regjeringen.no).

Aquaculture

From the beginning of the 1980s, aquaculture grew rapidly in Norway when initial attempts at salmon production on a large scale were successful. Today, aquaculture-produced fish makes up more than half of total fish exports, with a value of 20.2 billion NOK (see Figure 1). The aquaculture-produced fish is mainly split into salmon and trout, for a value of 18 billion and 1.9 billion NOK, respectively. In 2008, Norway produced an estimated 760,000 tons of Atlantic salmon, which is 51 percent of the total world production. More than 4,300 employees work directly with fish farming in Norway, and there are 1,267 grow-out licenses for fish farming (www.seafood.no). To start up fish farming demands permission, and to acquire concessions, high production standards are required with respect to the environment, fish health, and food safety. Norwegian aquaculture has a huge growth potential, and several projects have progressed to create a sustainable and competitive aquaculture industry. Developing a competitive production for other species like cod is also an important goal for the Norwegian authorities and the industry (www.regjeringen.no).

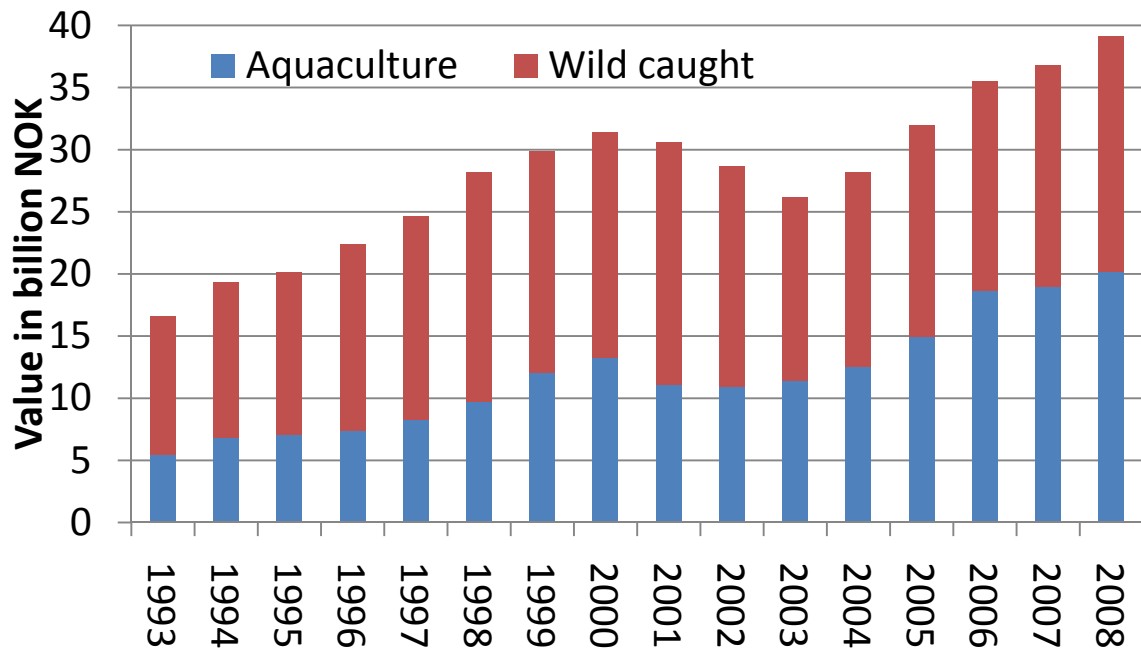


Figure 1 - Norwegian export of fish.
 (Source: Norwegian Seafood Export Council – www.seafood.no)

3. Lerøy Seafood Group³

As a foundation for understanding our analysis, the following chapter gives a detailed presentation of Lerøy Seafood Group ASA. The chapter includes the present state, history, strategy, business operations, and a market overview of Lerøy Seafood Group ASA.

3.1 Present state of Lerøy Seafood Group ASA

Lerøy Seafood Group ASA (LSG is the ticker symbol used on the Oslo Stock Exchange, and this abbreviation is used in the rest of the thesis) is one of Norway's largest exporters of fish. Salmon is the company's most important product and constitutes approximately 70 percent of the value of its product portfolio. In addition, LSG produces and distributes whitefish, shellfish, pelagic fish, and some other fish types.

The head office is located in Bergen, Norway. In addition, LSG operates with holding companies in France, Sweden, Scotland, Portugal, and Turkey, in addition to sales offices in France, the United States, China, and Japan. LSG has licenses for farming in Chile, but so far this has not been initiated here (see 3.4.2, Production).

LSG operates in the entire value chain and is one of the most vertically integrated downstream companies in the industry.⁴ Sales and distribution activities are likely to contribute 25 percent of the LSG's EBIT result this year and 60 percent of revenues (ABG Sundal Collier 2009).

Today, LSG is one of the largest players in the world market for salmon farming, an industry that has become increasingly globalized in recent years. Marine Harvest is the world's largest producer of farmed salmon, and is LSG's principal competitor due to its large size and

³ The information in this chapter is based on LSG's annual reports, 1999-2008 (if not, other references are given).

⁴ Interview with Frank Asche, 06.03.2009.

downstream structure for value-added products.⁵ Other competitors include Cermaq, Marine Farms, SalMar, and Sponfish (ABG Sundal Collier 2009).

As of May 26, 2009, the share price is 90.0 NOK, and according to Ole Møgster, LSG is currently a net beneficiary from the collapse in Chilean exports for the simple reason that LSG has no exposure to Chile.

3.2 History and development of LSG

LSG has its roots in the 19th century, when Ole Mikkel Lerøen sold fish on the Bergen fish market. As his business gradually developed, he started to include retail sales in Bergen. Two of his employees, Hallvard Lerøy Sr. and Elias Fjeldstad, went on to establish Hallvard Lerøy AS in 1939, which today has become one of LSG's principal companies.

In 1995, Hallvard Lerøy Jr. and his two sons, Ole-Eirik and Knut Hallvard, merged their shares into the holding company Lerøy Invest AS, which was later changed to the current name, Lerøy Seafood Group ASA (LSG).

The Group was a traditional family company until 1997, when a private placement with financial investors was carried out for the first time and the company was reorganized as a public limited company. In 2002, the company was listed on the stock market, with the goal of providing access to risk capital and in select cases using the shares as payment in connection with acquisitions.

As a company, LSG has experienced strong growth over the last few decades. In 1980, the company had revenues of approximately 100 million NOK (www.bergen-chamber.no). In 2008, revenues were in excess of 6057 million NOK. The Group now operates on an international scale, and since 1999, LSG has been acquiring interests in various domestic and international enterprises. Recent acquisitions include Midnor AS in 2003, Aurora in 2005, and both Lerøy Fossen and Hydrotech AS in 2006. In 2007, the Group continued to expand in

⁵ Interview with Ole Møgster, 18.03.2009

the aquaculture industry by acquiring the aquaculture business operations of Austevoll Seafood ASA.

Last year, LSG received a lot of media attention when the Lerøy family ceased to take part in the business. In November 2008, Austevoll Seafood ASA (AUSS), a global pelagic fishery company, increased its shareholding by purchasing a substantial amount of LSG shares, at a price of 59.00 NOK per share. After the acquisition, the total AUSS shareholding represented 74.93 percent of the company. In May 2009, AUSS sold 6,000,000 shares in LSG at a price of 82.00 NOK per share. After this transaction, the total shareholding of AUSS represents 63.7 percent of the company. Ole Møgster and Helge Møgster (two brothers) control Austevoll Seafood ASA through their jointly controlled company Laco AS. The son of Helge, Arne Møgster, is the CEO of Austevoll Seafood ASA.

3.3 Business goals and strategy

The vision of LSG is to be the leading and most profitable Norwegian supplier of quality seafood under the motto, “What can be sold will be produced.”

Since its establishment, the company has focused on developing markets for fresh and frozen fish products, and the company has been a trailblazer into new markets. LSG was the first Norwegian fish company to export fresh salmon to the United States and Japan by air freight, and they emphasize that they are keeping alive a pioneering spirit. In 1990, Hallvard Lerøy AS established a distribution office in France. The company has continued to enter new foreign markets, and today, LSG has distribution offices worldwide.

LSG clearly states that they place a lot of emphasis on their business relations. Developing binding, long-term, and cost effective collaborations with suppliers has been imperative and will increase in both the production and marketing sectors. Moreover, a high level of processing also requires a close proximity to the market and good logistic solutions. For instance, the Group’s increased positioning in Sweden is said to have created positive results and expectations of interesting opportunities in the future.

LSG argues that their decentralized corporate structure is the foundation for the continued growth and development of the company. With sales and distribution activities in the world's most important seafood markets and production activities located in different seafood clusters, LSG aims at creating synergies through the exchange of know-how from various markets and production environments.

Finally, a key strategy of LSG is to limit the risk represented by the EU Commission's threats to impose long-term trade barriers. LSG maintains that for several years, trade barriers have been a serious impediment for the company. They claim that trade between Norway and other nations should be carried out under international rules. LSG is therefore working systematically to increase the acceptance of Norwegian seafood in the European market. The tariff on LSG's Norwegian-produced salmon and salmon filets exported to the EU is 2 percent, while the tariff on processed salmon and salted salmon filets is 5.5 percent and 15 percent, respectively (www.seafood.no).

3.4 Business overview

LSG divides its business into two main areas: Sales & Distribution and Production. Figure 2 sets forth LSG's corporate structure and includes the main companies in the Group. The business overview of LSG below follows the same structure. The focus is on the sales offices and production subsidiaries abroad, as they are the most important for our analysis.

* CORPORATE STRUCTURE 31.12.2008

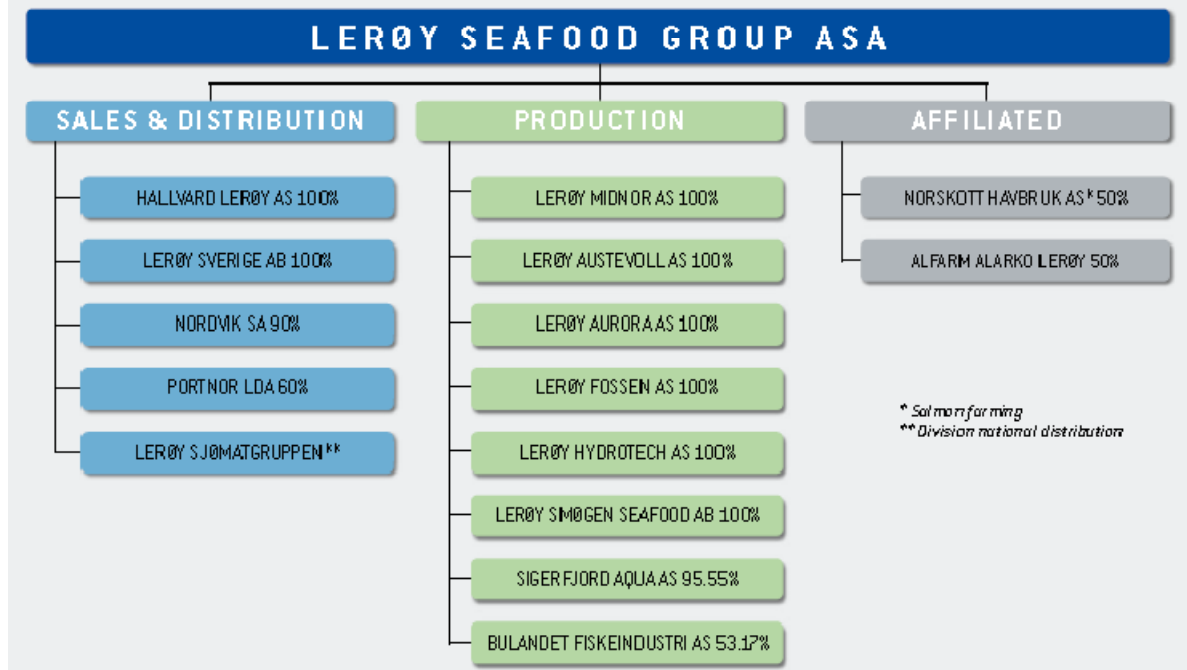


Figure 2 - Corporate structure of LSG
(Source: LSG annual report 2008)

3.4.1 Sales & Distribution

The Sales & Distribution activities of LSG (figure 2) are represented by Hallvard Lerøy AS and its sales offices, as well as the established subsidiaries of LSG in Sweden (Lerøy Sverige AB), France (Nordvik SA), and Portugal (Portnor Lda). Lerøy Sjømatgruppen is a division for national distribution in Norway.

Head office for Sales & Distribution in Norway

Hallvard Lerøy AS is the largest company in the Group, registering a turnover of 5275 million NOK in 2007. The organization is located in the head office in Bergen, and has responsibility for the sales offices in France (SAS Hallvard Lerøy AS), the United States, China, and Japan. Hallvard Lerøy AS plays the key role for the development of LSG's sales and marketing activities. Hence, it provides subsidiaries with support, but also gathers and secures market

information and human capital to create synergies for the worldwide operations of Sales & Distribution.

Lerøy Sjømatgruppen is a subsidiary of Hallvard Lerøy AS and is LSG's division for distribution in the Norwegian market through its subsidiaries in Bergen, Oslo, Stavanger, and Trondheim. Norway is a vital market for LSG (see 3.5, Market overview), and the Group expects that investments in nationwide distribution will increase in the years to come.

Sales & Distribution in Sweden

Lerøy Sverige AB is a subsidiary for the three Swedish companies Lerøy Allt i Fisk AB, Lerøy Fiskgrossisterna AB, and Lerøy Nordhav AB with their respective subsidiaries. Lerøy Allt i Fisk AB hold a strong position in the Swedish catering and institutional households market. Lerøy Fiskgrossisterna AB focuses on the grocery trade industry and is Stockholm's largest distributor of fish. Sweden is an important market for LSG, and ever since the Group took over the three companies in 2001, they have been close partners of Hallvard Lerøy AS.

Sales & Distribution in France

Located in Boulogne, France, Nordvik SA is 90 percent owned by LSG and is one of France's biggest importers of fish. The sales and distribution activities in France are of vital importance for LSG, as France is the Group's most important market. It is claimed that Nordvik SA gives a suitable interface with customers in France, and the subsidiary is being continuously developed in cooperation with Hallvard Lerøy AS and the local managerial staff.

Sales & Distribution in Portugal

Portnor Lda is located in Portugal and is 60 percent owned by LSG. The company holds a strong position on the Iberian Peninsula, which is a large and important market for Norwegian fish. Portnor Lda has been primarily striving to improve their position as a distributor of fresh fish. LSG claims that the local management with a minority shareholding

is very competent, and together with LSG, Portnor Lda continues to develop its operational segment.

3.4.2 Production

By production, we mean the farming and processing of fish. Fish farming is the upstream production process, while processing is the downstream production process (value-added production). LSG divides its products into the following areas: salmon products (whole and processed salmon), trout, whitefish, shellfish and pelagic fish. The figure above (figure 2) illustrates the production companies of LSG.

The processing of fish takes place in Norway, Sweden, Scotland, and Turkey. LSG is also in the process of acquiring from AUSS the majority of the shares of a processing and distribution company in France. In Chile, LSG possesses licenses for fish farming. According to Ole Møgster, fish farming in Chile is presently out of the question because of the current problem with fish disease in the area. However, it is likely to be initiated in the long term.⁶

Processing in Sweden

Lerøy Smøgen Seafood AB is a Swedish seafood group involved in the production of various types of smoked seafood products. It also produces and distributes seafood salads and marinated products based on shellfish in brine. We do not have access to any income statements from LSG's processing activities in Sweden.

3.4.3 Affiliated companies

Scotland

In Scotland, Norskott Havbruk AS is 50 percent owned by LSG, with the other half taken up by the fish farming company SalMar AS. Norskott Havbruk AS was set up in 2001 with the purpose of acquiring Scottish Sea Farms Ltd, the second-largest fish farming company in the

⁶ Interview with Ole Møgster, 18.03.2009.

UK. Norskott Havbruk AS owns 100 percent of Scottish Sea Farms Ltd. In addition to fish farming, the company processes salmon in Scotland and on the Shetland Islands. LSG's share of revenues from Norskott Havbruk AS totals to 772 million NOK. This revenue represents 12.7 percent of the total revenues of the Group. LSG claims that the company is developing into a leading and cost-effective producer of salmon within the EU, and that the company holds a strong position in several high-quality market segments.

Turkey

Alfarm Alarko Lerøy is based in Turkey and is 50 percent owned by LSG. LSG claims that this company has developed the Turkish market for Atlantic salmon. In addition to importing and distributing fresh fish, the company also engages in the processing of fish.

3.5 Market overview

This market overview takes a closer look at LSG's sales per market and product over the last decade. In general, our illustration shows that LSG has leveraged strong growth, and the market and product composition has been fairly stable over the period.

In 2008, LSG had an 11.0 percent share of Norwegian seafood exports, 17.3 percent of Norwegian salmon exports, and 24.5 percent of Norwegian value-added salmon exports (in terms of value) (www.leroy.no). In the following section, we will present LSG's sales per market and sales per product from 1998 to 2008. In 2008, LSG had revenues of 6057 million NOK, up from 1750 million in 1998.

3.5.1 Sales per market

Figure 3 shows that revenues have increased in all the geographical areas since 1998, but the largest absolute increase has been in the EU. In 2008, EU sales amounted to 3524 million NOK, up from 1038 million in 1998. Sales in Norway totaled 1029 million NOK in 2008, up from 173 million in 1998. In Asia and the USA/Canada, sales have increased from 350 million and 136 million to 672 million and 297 million NOK, respectively. However, these areas make up a relatively smaller portion of LSG’s revenues in 2008 than in 1998. The rest of Europe represented the company’s highest relative increase in sales during the period.

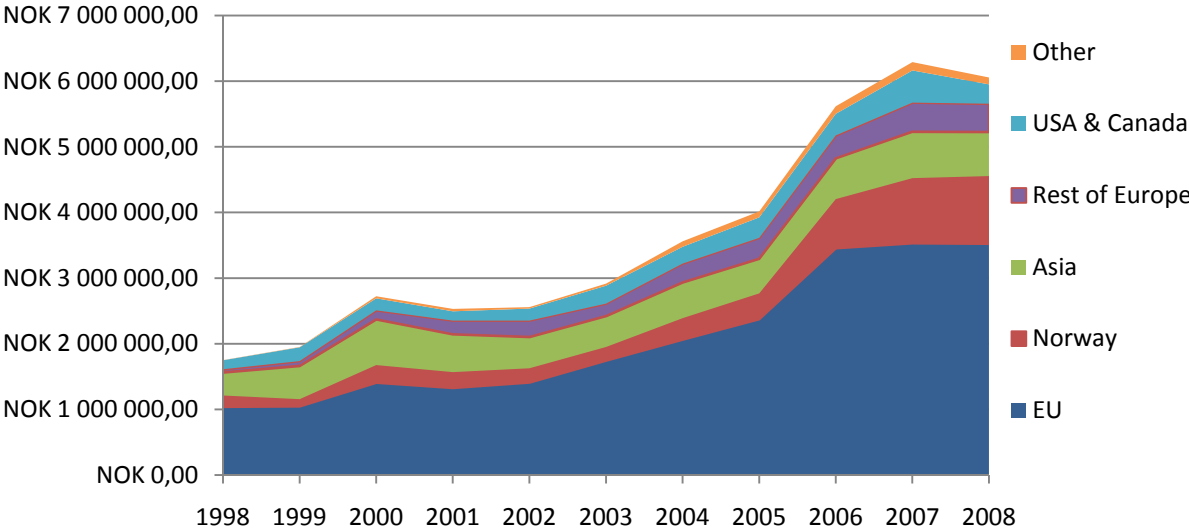


Figure 3 - LSG's sales development of products, 1998 - 2008⁷

⁷ Figures 3 and 5 are calculated from figures given in the annual reports of LSG from 1998 to 2008.

Figure 4 illustrates LSG's revenue distribution of its markets in 2008. The EU has a market share of 58.2 percent, Norway 17.0 percent, Asia 11.1 percent, the rest of Europe 7.1 percent, the USA and Canada 4.9 percent, and others 1.7 percent. In comparison, the market share in 1998 broke down into the EU at 59.3 percent, Norway 9.9 percent, Asia 20.0 percent, the rest of Europe 2.8 percent, the USA and Canada 7.8 percent, and others 0.2 percent.

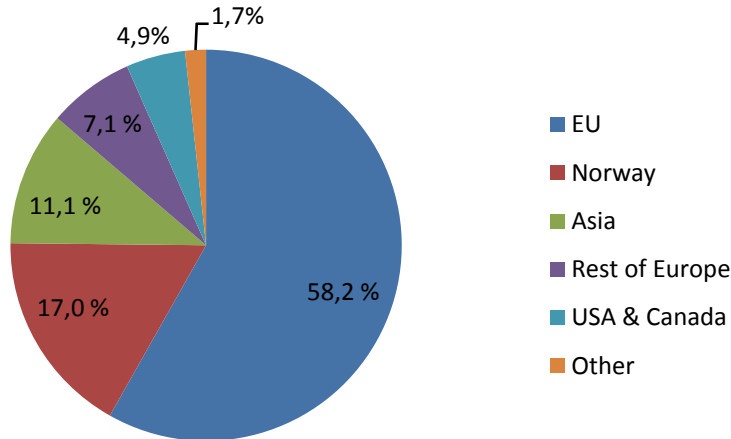


Figure 4 - LSG's sales per market in 2008
(Source: LSG annual report 2008)

3.5.2 Sales per product

Figure 5 shows that the revenues of all product groups have increased from 1998 to 2008. The decrease in sales revenue from 2007 to 2008 can primarily be explained by the reduction in revenues from whole salmon and whitefish. Whole salmon is the largest product group of LSG and has experienced the largest absolute revenue growth, from 989 million NOK in 1998 to 2855 million in 2008. Processed salmon is the second-largest product group of LSG, experiencing a revenue growth from 201 million NOK to 1314 million in 2008. Sales of trout and shellfish started in 2001, and in 2008 the revenue totaled to 478 million and 363 million NOK, respectively.

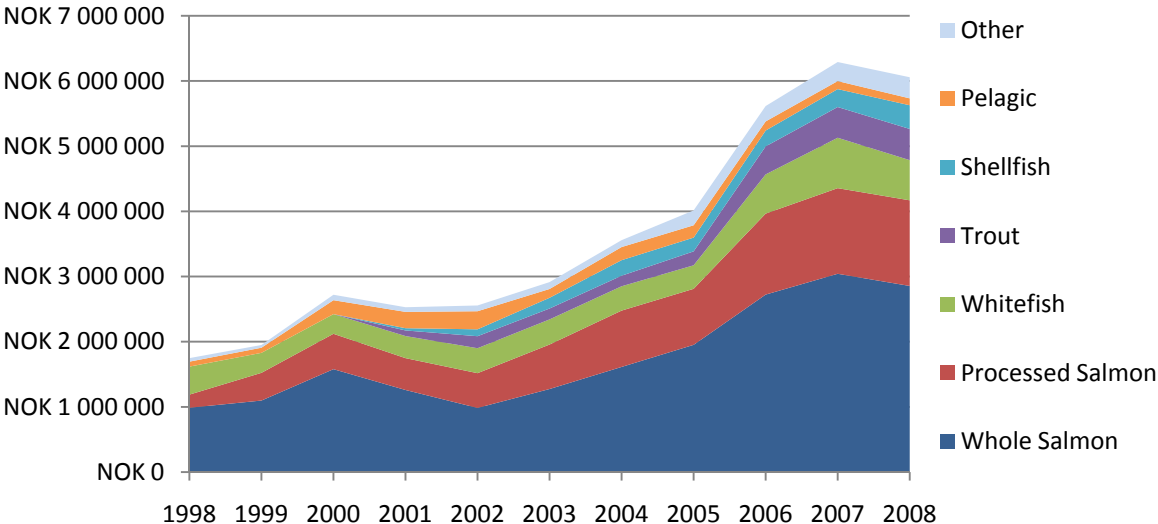


Figure 5 - LSG's sales development of products, 1998-2008⁸

⁸ See footnote 7.

Figure 6 illustrates LSG’s revenue distribution of its product groups in 2008. Of the total revenues, whole salmon makes up 47.1 percent, processed salmon 21.7 percent, whitefish 10.2 percent, trout 7.9 percent, shellfish 6.0 percent, others 5.3 percent, and pelagic fish 1.8 percent. In comparison, the market share in 1998 was as follows: whole salmon 56.5 percent, processed salmon 11.5 percent, whitefish 24.5 percent, others 3.1 percent, and pelagic fish 4.4 percent (trout and shellfish were not sold). The sharp increase in the revenue share of processed salmon between 1998 and 2008 took place in the 1998-1999 period. In 1999, revenues increased to 425 million NOK from the 1998 total of 201 million, resulting in a market share of 21.8 percent. This has remained more or less constant ever since (with a maximum of 24.3 percent and minimum of 19.2 percent).

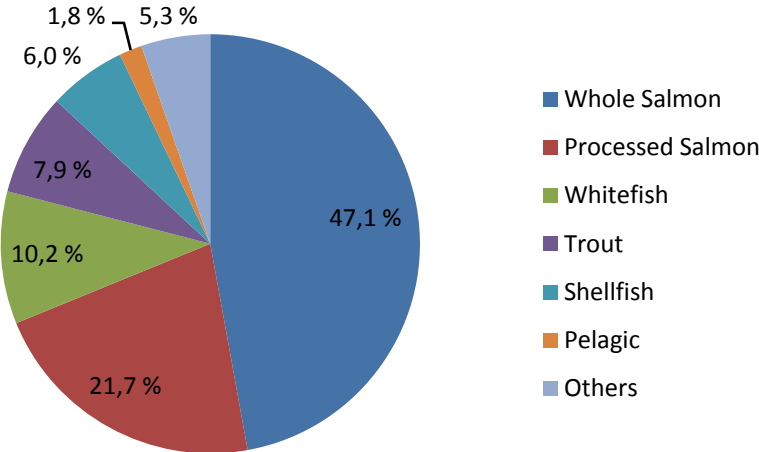


Figure 6 - LSG's sales per product group in 2008 (Source: LSG annual report 2008)

4. Trade agreements

International trade agreements make up an important framework that has a considerable impact on trade for Norwegian fish exporters such as LSG. Over the last few decades, decisions regarding market access have shifted from a national to a supranational and global level. The chapter describes the EU, EFTA, EEA, and the WTO/GATT agreement.

4.1 The European Union (EU)

The European Union is an economic and political partnership between 27 European countries, with a total population of approximately 495 million citizens. The European Economic Community (EEC)⁹ was established in 1958, based on the 1957 Treaty of Rome. Germany, France, Belgium, the Netherlands, Luxembourg, and Italy were the founding members of the EEC, which was an expansion of the European Coal and Steel Community, a common market for the trade of coal, steel and iron. In 2004, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Slovakia, Slovenia, and Poland (see Chapter 9, Structural changes of Norwegian fish exports to Poland) joined the EU. The last expansion of the EU took place in 2007, with the accession of Bulgaria and Romania (www.europa.eu).

The purpose of the EU

In the Treaty of Rome, the EEC was defined as a common market. Nevertheless, in the period of 1958-1968, the EEC was in fact only a free trade area (Austvik et al. 2002). When the customs union was established in 1968, the EEC obtained common protections with respect to third countries. Even though elements of the EEC's policies were characterized as a common market, it was only with the institution of the Single ACT in 1986 that the EU became a true common market where capital, labor, goods, and services could move freely (www.europa.eu).

⁹ Now the European Union (EU).

Trade Policy

The EU's common trade policy operates at two levels. First, within the World Trade Organization (WTO), the European Union is actively involved in setting the rules for the multilateral system of global trade. Second, the EU negotiates its own bilateral trade agreements with countries or regional groups of countries. When the rules regarding the duties of the original member countries were being drawn up, it was decided that the fishing and agriculture sector would ensure the safety of the food supply (www.europa.eu). Therefore, the EU has implemented a variety of different trade barriers over the last two decades to protect its own production of fish (Ababouch et al. 2006). The EU also aims at securing the long-term and sustainable use of the ocean's resources, as well as ensuring sufficient access to fresh and healthy fish products (www.europa.eu).

4.2 Trade agreements between the EU and Norway

The Norwegian trade of fish and fishery products to and from the EU is regulated by the EEA agreement, various bilateral agreements, and the EU's tariffs bound by the WTO. The fish trade between Norway and the EU is regulated by *Fiskebrevet* (the "Fishing Letter") from 1973, compensation agreements from 1986, 1995, 2004, and 2007, and Protocol 9 of the EEA agreement of 1994. According to the Norwegian Seafood Export Council (NSEC), the EEA agreement is the most important agreement regulating trade between Norway and the EU (www.seafood.no). In addition, Norwegian fish exporters can make use of the EU's autonomous quotas and WTO/GATT quotas. Norway's trade agreements in Europe are quite complex, since Norway is a member of the WTO, EEA, and EFTA, but not the EU. In the following, we will try to highlight the most relevant trade agreements for LSG.

4.2.1 The European Free Trade Association (EFTA)

The European Free Trade Association (EFTA) is an international organization which today consists of four members: Iceland, Liechtenstein, Switzerland and Norway. The EFTA Convention was signed on January 4, 1960 in Stockholm. The purpose of the agreement was

to create an alternative to the EEC (now EU), inducing free trade through a gradual liberalization of trade between the members. The members established an agreement on free trade without tariffs between themselves, but in contrast to a customs union, they do not have a common external tariff applying to countries outside the agreement (www.efta.int).

The “fishing letter”

In a national referendum, Norway voted against EEC membership in 1972. Affairs concerning the trade of fish were settled in the so-called “Fishing Letter” of 1973. The Fishing Letter instituted certain tariff reductions to make sure that the access of Norwegian fish exports to former EFTA countries was maintained (www.efta.int).

Since the establishment of the EFTA agreement, some of its members has gone on to become members of the EU, and the EFTA free trade area has been reduced. In negotiations with the EU, therefore, Norway has received compensations for reduced market access (in 1986 [see Table 1], 1995, 2004, and 2007) (www.efta.int). Today, the compensations are based on quotas founded on historical trade flows, which are static and reviewed each year (see 7.2, The effects of non-tariff trade barriers on LSG’s exports).

Product	Quantity (tons)	Tariff	Third country tariff
Dried cod	3900	0	13
Salted and dried cod	13250	0	13
Salted cod	10000	0	13
Salted cod filets	3000	0	20
Frozen fish products	400	10	20

*Table 1 - Import quotas granted Norway in 1986
(Source: Stortingsproposisjonen nr 15, 1986-1987)*

Free trade agreements

Since its establishment, the EFTA has entered into free trade agreements with third countries all over the world, and today the EFTA has signed a total of 17 free trade agreements (FTAs) worldwide (see 7.1, Tariffs effects on LSG's exports). Norway's portfolio of free trade partners through the EFTA has been focused upon Eastern Europe, the Middle East, and the Mediterranean. The guiding policy has been to secure trade agreements with the same countries as the EU in order to avoid a deterioration of the general competitiveness of EFTA members (www.efta.int).

4.2.2 The European Economic Agreement (EEA)

The Agreement on the European Economic Area (EEA) from January 1, 1994, is a trade agreement between the 27 EU Members and the EFTA countries (except Switzerland). All the countries involved are part of a single internal market, named the "Internal Market." Switzerland is not part of the EEA Agreement, but has a bilateral agreement with the EU. The EEA Agreement covers the free movement of goods, services, workers and capital all over the 30 EEA States. The Agreement provides equal rights and obligations within the Internal Market. However, the EEA Agreement does not cover the EU's Common Agriculture and Fisheries Policies (www.efta.int). The trade of fish in the EEA agreement is regulated by Protocol 9 (see Appendix 1), which is the most important document concerning the trade of fish between the EU and Norway. A Norwegian EU membership would mean entering the EU's Common Agriculture and Fisheries Policies (www.europa.eu). This implies a complete removal of tariffs and other trade barriers to the EU market for Norwegian fish exporters.

4.2.3 The World Trade Organization (WTO)

The WTO was established January 1, 1995, and is the organization which sets the basis for all the world's trade agreements. The trade regulations started in 1948 with the General Agreement on Tariffs and Trade (GATT). The GATT has evolved through several rounds of negotiations; the most comprehensive round, known as the Uruguay Round, lasted from

1986 to 1994 and led to the establishment of the WTO. At present, 153 countries are members of the WTO. The principal objective of the WTO is to ensure that trade flows as freely as possible, by reducing trade barriers such as tariffs on international trade and making the regulations more transparent (www.wto.org).

Most Favored Nation

One of the main principles in the WTO/GATT is the Most Favored Nation Article, which guarantees permission to create regional trade blocs. This implies that if a nation makes some special deal with another nation (such as a lower customs duty rate for one of its products), it must make sure that other WTO members will not be treated worse (www.wto.org).

The Uruguay Round

In the Uruguay Round, tariffs on industrial products imported by developed countries were reduced by an average of 40 percent, whereas tariff cuts were only 26 percent for fish and fishery products. The average weighted import tariffs on fish products in developed countries were reduced to around 4.5 percent after the Uruguay Round (www.fao.org).

5. Theory and methodology

In this chapter, we will introduce the theories we regard as vital to understanding how the liberalization of trade through a Norwegian EU membership can affect the firm performance of LSG.

5.1 Theories of international trade and economic integration

In the academic field of international trade and economic integration, the object is to study how trade reallocates resources and affects the economy. An appropriate definition of economic integration is the following: “As economic integration increases, the barriers of trade between markets decreases.”¹⁰ A Norwegian EU membership would imply closer economic integration between Norway and the EU because of reduced trade barriers for goods such as fish.

To analyze the effect of liberalization, trade literature typically distinguishes between standard trade theory and new trade theory. A brief description of the two is given below.

5.1.1 Standard trade theory

Standard trade theory is built on the assumption of perfect competition, where prices are taken as given and products are homogenous. Adam Smith first promoted the liberalization of free trade with the publication of *The Wealth of Nations* in 1776. Smith demonstrated the benefits of free trade with his theory of absolute advantage, which held that countries should exploit their absolute advantage by specializing in a product or products. Building upon this, David Ricardo showed that there is always a basis for beneficial trade regardless of whether countries have any absolute advantages. Hence, Ricardo introduced the comparative advantage theory, which says that a country should produce and export those

¹⁰ Béla Balassa, lecture notes for INB 427-Globalisation and integration, Lecture # 1; Introduction by Armando Pires and Siri Pettersen Strandenes.

goods that represent lower opportunity costs. Every country has a comparative advantage, and by specializing in it and trading freely and openly, countries will increase their wealth. Today, the leading theory of what determines a nation's trade patterns is known as the Heckser-Ohlin theory, which is based on Ricardo and Smith's absolute and comparative advantages (Pugel 2007):

The Heckser-Ohlin theory predicts that a country exports the product(s) that use its relatively abundant factor(s) intensively and imports the product(s) using its relatively scarce factor(s) intensively. (Pugel 2007:60)

This means that countries should specialize in those products where they have a relative advantage on the input factors. For instance, a relatively labor-rich country will export labor-intensive goods and import capital-intensive goods.

5.1.2 New trade theory

New trade theory is based on types of market structure that are different from the perfectly competitive markets of standard trade theory. Much of the trade in manufactured goods between industrialized countries is intra-industry trade. This is a two-way trade in which the country both exports and imports the same or very similar products. The major explanations for intra-industry trade are product differentiation (monopolistic competition), internal economies of scale (oligopolistic competition), and external economies of scale (Pugel 2007).

Monopolistic competition is imperfect competition with differentiated goods where prices are not taken as given. This gives the producer market power. For one reason or another, consumers view each firm's brand as different from other brands (Pugel 2007).

Oligopoly is the situation in which a few firms supply much of the market. Global oligopoly can occur when scale economies internal¹¹ to a firm give large cost advantages over competitors (Pugel 2007). This imposes barriers to entry and makes it difficult or impossible for new firms to enter (Rubinfeld and Pindyck 2005).

¹¹ Scale economies are internal if the expansion of the size of the firm itself is the basis for the decline in its average cost.

New trade theory also focuses on the benefits of external economies of scale.¹² Agglomeration forces indicate that firms derive advantages from being located in close proximity to each other. This can be due to a large final demand that attracts proportionally more firms or technological externalities, implying that firms generate knowledge other firms can then use without paying for it (Pugel 2007).

5.2 Effects of tariffs

According to standard trade theory, tariffs work as trade restrictions, which in the case of a Norwegian EU membership would set limits on the quantity imported to the EU from Norway.

A Tariff, as the term used in international trade, is a tax on importing a good or service into a country. (Pugel 2007:129)

Figure 7 illustrates what happens when a large economic area like the EU implements a tariff on the import of salmon; this will lead to a decrease in the demand in the world market, and the world market producer price on salmon will decrease (PW1 to PW2). Consequently, the quantity offered to the world market will decrease from X0 to X-new. The tariff will lead to an increase in price of fish sold in the EU market (to P_{eu}) and the import of salmon will be reduced from the area X1:X4 to X2:X3. The net world trade of salmon will decrease from X0 to X-new which equals the decrease in imports from EU ($X_0 - X_{new} = (X_4 - X_3) + (X_2 - X_1)$). Producers inside the EU can increase their supply by X1:X2. This tariff will transfer income from salmon consumers in the EU and Norwegian producers to the EU salmon producers. Consumers inside the EU and producers outside the EU will share the burden of paying for the tariff (Austvik et al. 2002).

¹² Scale economies are external when the expansion of the entire industry's production within a geographic area lowers the long-run average cost for each firm in the industry within that area.

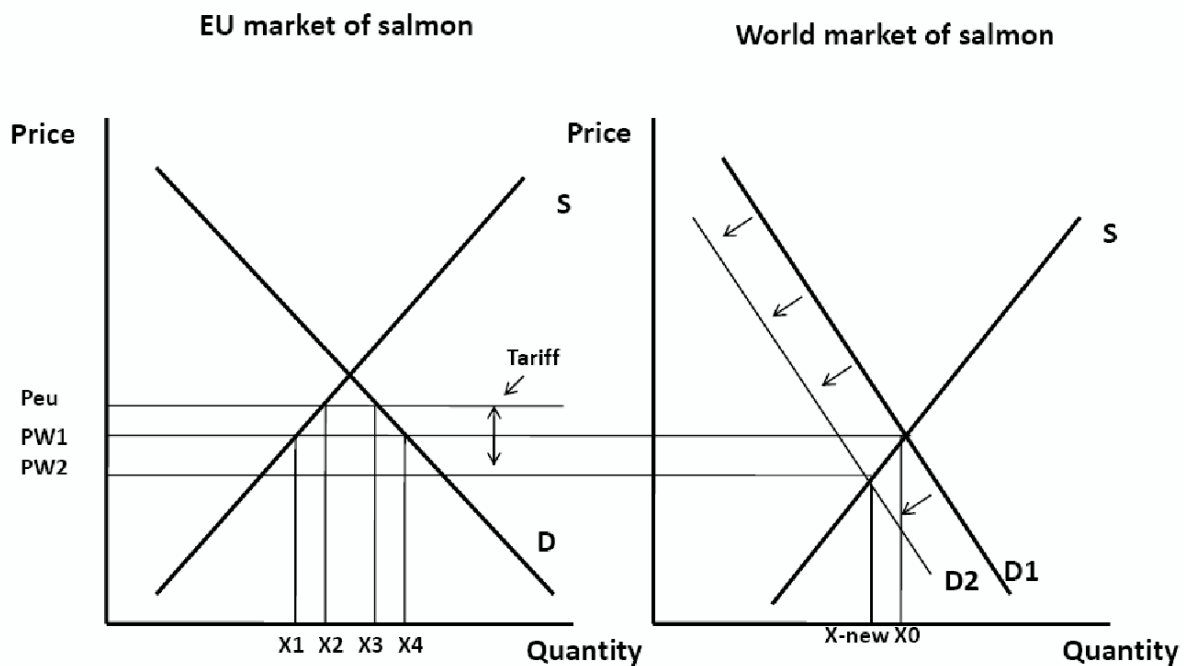


Figure 7 - Effect of a tariff

5.2.1 The effective rate of protection

Since the tariff is normally a percentage of the final product, tariffs lead to a decrease in the degree of processing. This is because the exporter also has to pay the tariffs on the value of the value added (Asche et al. 2005). Value added is the sum of wages paid to labor, the rents paid to landowners, and the profits and other returns to owners and providers of capital. In addition to the primary products, the industry uses various kinds of material and components as inputs in production. A measurement that quantifies the effect of the total tariff structure is “the effective rate of protection” (Pugel 2007).

The effective rate of protection of an individual industry is defined as the percentage by which the entire set of a nation’s trade barriers raises the industry’s value added per unit of output. (Pugel 2007:138)

$$\text{The effective rate of protection} = \frac{\text{Unit value added free trade} - \text{Unit value added with tariff}}{\text{Unit value added with tariff}}$$

As an example, suppose the price on processed salmon to be 30 NOK per kg, the tariff on salmon to be 10 percent, and the tariff on input used to process the salmon 5 percent (see

Table 2). The 10 percent tariff rate raises the price of processed salmon with inputs to 33 NOK per kg. The 5 percent tariff costs the industry 1.1 NOK per kg. The two sets of tariffs together would raise the unit value added by 1.9 NOK per kg salmon processed. This 1.9 NOK per kg represents a protection of value added in the salmon industry of 23.8 percent of value added, not just 10 percent (Pugel 2007).

	With free trade	With tariffs
Unit value added	8	9.9
Unit cost of material and components inputs	22	23.1
Price per kg salmon	30	33

Table 2 - Illustrative calculation of an effective rate of protection

$$\text{Effective rate of protection} = \frac{9.9 - 8}{8} = 23.8 \%$$

This example illustrates that the effective rate of protection is normally much higher for processed products. In practice, LSG must consider the effective rate of protection when making investment plans, and not just the regular tariff.

5.3 Non-tariff barriers to imports

NTBs are different from tariffs in that they are less visible and not as easy to detect (Pugel 2007). In this section, we will explain the effects of quotas and minimal prices.

Non-tariff barriers (NTB) to imports are any policy used by the government to reduce imports, other than a simple tariff. (Pugel 2007:147)

5.3.1 The import quota

A typical non-tariff barrier is the import quota (or just quota), a limit on the total quantity of imports of a product allowed into the country. If the quota quantity is less than the quantity demanded, the quota has an impact on the import of the product (Austvik et al. 2002).

Figure 8 shows a quota equal to $Q = X5 - X1$. Q is offered in the home market (e.g. the EU market) together with home production ($X1$). This would give a total supply $X5$ at the world market price (Pw). In this situation, the marginal willingness to pay will be higher than Pw , which will lead to higher production (if possible) in the home market. When the home production has reached $X2$, total supply is $X2 + Q = X3$. The new supply curve in the home market is now $S + Quota$, and the price has increased to $Pw + "t"$, where " t " is the tariff which would lead to the same quantity imported as the quota. As a result, consumers lose the area represented by $1+2+3+4$. Area 1 becomes a profit for the home producers (e.g. salmon producers inside the EU). Areas 2 and 4 represent a deadweight loss due to suboptimal production and lower consumption. Area 3 is a gain for the actor obtaining the value of the quota (Pugel 2007).

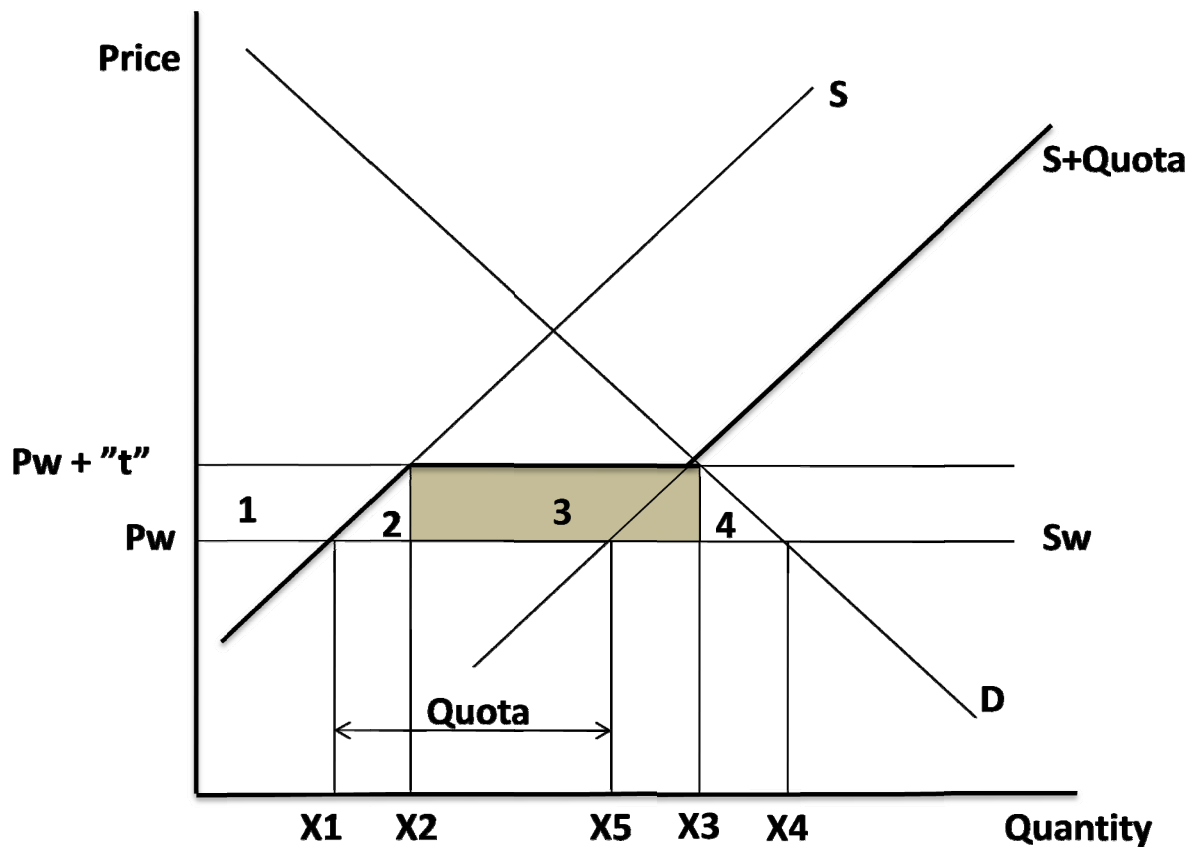


Figure 8 - Effect of an import quota

5.3.2 Minimal import price (MIP)

Minimal import prices (MIPs) is used as an antidumping countermeasure. MIPs towards Norwegian salmon exporters are prohibitions to sell salmon under a given price. This restriction has no effect as long as the market price is above the MIP, but if the market price of salmon falls below the MIP, it becomes impossible for LSG to export salmon to the EU, and LSG would thus have to hold salmon back until the price rises above the MIP. This will transfer EU sales from LSG and other Norwegian producers outside the EU to Scottish- or Irish-produced salmon, or to other exporting countries not affected by the MIP. This implies a risk that Norwegian fish exporters will be absent from the market, with the potential for losses (Asche et al. 2005). The MIP leads to uncertainty for LSG in how to calculate future income, because they will for instance have to observe the market and change the supply continuously.

In theory, there are several creative ways to avoid minimal prices. Norwegian exporters can sell salmon according to the minimal price, but compensate by selling trout or other species not affected by the minimal price agreement cheaper than the market price. Norwegian exporters which produce inside the EU have another way to avoid the minimal price. They can sell salmon produced within the EU below the minimal import price, while selling Norwegian salmon at the MIP (Asche et al. 2005).

5.4 Methodology of the empirical analysis in Chapter 6

In our empirical analysis, we compare products which increased their EU share of the total Norwegian fish export with the products receiving a tariff concession in the EEA agreement (see 4.2.2, The European Economic Agreement (EEA)). We use a method called binary interval estimation, where we estimate the probability of a certain outcome. We have registered X successes out of n observations, which in our case means X products with a tariff concession out of n products checked. The probability for success (p) can be written as

$$\hat{p} = \frac{X}{n}$$

Two samples are given:

- The products with increased EU export share (n_1)
- The products with reduced EU export share (n_2)

First, we have a large sample and assume that the first sample is normally distributed:

$$X_1 \sim N(\mu_1, \sigma^2_1/n_1)$$

where σ^2_1 represents the variance of the products with increased EU export share, and n_1 represents the size of the sample. Similarly,

$$X_2 \sim N(\mu_2, \sigma^2_2/n_2)$$

Independence of the two sampling procedures will ensure that the two random variables \bar{X}_1 and \bar{X}_2 are independent. Hence, the moments of $(X_1 - X_2)$ will be

$$\begin{aligned}
E(X_1 - X_2) &= E(X_1) - E(X_2) \\
&= \mu_1 - \mu_2
\end{aligned}$$

$$\begin{aligned}
var(X_1 - X_2) &= (+1)^2 var X_1 + (-1)^2 var X_2 \\
&= \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}
\end{aligned}$$

Since the distribution will be approximately normal, we summarize by writing

$$(X_1 - X_2) \sim N\left(\mu_1 - \mu_2, \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}\right)$$

Consequently, this leads to¹³

$$STD(X_1 - X_2) = \sqrt{\hat{p}(1 - \hat{p})\left(\frac{1}{n_1} + \frac{1}{n_2}\right)}$$

If the tariff concessions did not have any effect on the Norwegian fish export we can assume that the n_1 and n_2 would have the same expected \hat{p} . If we find that the difference in success between n_1 and n_2 is greater than the standard deviation of \hat{p} we have a significant difference in change between the two categories and we can conclude that tariff concessions granted in 1994 had a significant impact on Norwegian fish export (Wonnacott and Wonnacott 1990).

¹³ For more information see: (Wonnacott and Wonnacott 1990:164).

6. Empirical analysis of the EEA agreement

The purpose of this analysis is to examine the effect of earlier tariff concessions granted Norway by the EEA agreement of 1994. Hence, it will be an important guideline when assessing the tariff effects of a Norwegian EU-membership for Norwegian fish producers. A Norwegian EU membership implies a complete removal of all tariffs with the EU (see 4.2.2, The European Economic Agreement (EEA)). This method is based on a statistical analysis by Hannesson (2000).

6.1 The EEA agreement and tariff concessions

In the EEA agreement implemented in 1994, a separate fish treaty was established in Protocol 9 which gave Norway a reduction in tariffs for certain types of fish. Table 3 below illustrates the tariff concessions given to some selected products. A typical tariff reduction in Protocol 9 was from 12 percent to 0, which was for instance the case with all whitefish (e.g. cod). The tariff on salmon was not changed with the EEA agreement and stayed constant at 2 percent. Some of the reductions were implemented immediately, and some were implemented over a four-year period from 1993 to 1997. In total, 129 different products received tariff concessions.

Statistic number	Fish Species	Tariff by 1.1. 92	Tariff by 1.1. 93	Tariff by 1.1. 97
0301	Living fish			
	Trout	12	10.3	3.6
	Eel	3	2.5	0.9
	Carp	8	6.8	2.4
	Turbot	16	13.7	4.8
	Salmon	2	2	2
	Freshwater fish	8	6.8	2.4
	Saltwater fish	16	13.7	4.8
0304	Frozen fish			
	Pacific Salmon	2	2	2
	Cultured Trout	12	10.3	3.6
	Other Trout	12	10.3	3.6
	Cod	12/3,7	0	0
	Cod fillets	20/0	0	0
	Dried Cod	13/10/0	0	0
	Herring	15	15	15

*Table 3 - Tariff Concessions granted Norway by the 1994 EEA agreement for some selected products
(Source: Norwegian Seafood Export Council [www.seafood.no])*

6.1.1 A description of the analysis

The analysis is based on statistical data on the Norwegian fish export to the EU from 1990 to 2008.¹⁴ The analysis compares the EU share of the Norwegian fish export with the total

¹⁴ The data used for our analysis is taken from Statistics Norway's statistical database, available at www.ssb.no.

Norwegian fish export before and after the agreement. The analysis aims at finding out whether the products receiving a tariff concession in 1993 have increased their EU share of total Norwegian fish exports. The tariff concessions should have increased the EU share of exports with respect to the products involved, either at the expense of other markets or by increased production for the EU market (see 5.2, Effects of tariffs). If a significant number of fish products receiving tariff concessions after the EEA agreement increased their EU share, this indicates that tariffs are an important trade barrier. Hence, the elimination of tariffs through EU membership should be beneficial for Norwegian fish exporters.

The analysis looks at changes in EU shares of total export for all products from the periods of 1990-1992 and 2006-2008. Data from 1990-1992 are analyzed here because this was the last period before the tariff reductions were implemented. Our analysis is similar to Hannesson (2000), which looks at the periods 1990-1992 and 1997-1999. Hannesson (2000) analyzes the period of 1997-99 because 1997 was the first year in which all tariff concessions had come into effect. One possible limitation of this is that the analysis was carried out too close to the last tariff concessions to gauge their full effect. 2006-2008 is the most recent period and is long enough after the last tariff concessions to reveal their full effect.

In our analysis, we looked at changes in the export shares of the current EU members (see 4.1, The European Union). 15 of the countries joined the EU between 1995 and 2007. It could be objected that we should have looked at changes in export share with the countries that were members before the EEA agreement was signed, as the tariff concessions should primarily affect these countries, possibly at the expense of the countries that later joined the EU. We did this analysis as well, however, and it does not change our result.

The classification of products has changed slightly over the period, but in order to make all products comparable, we merged all processed shrimp and all processed salmon products into one category. We excluded those products that do not seem to be comparable. In both periods, a total of 110 products are included, excluding live fish, fodder fish and fish oil.¹⁵ 76 products, or 69 percent, were affected by tariff concessions in the EEA agreement.

¹⁵ The products which had a total export value of less than 50 million NOK in 2006-2008 are excluded.

6.1.2 Findings and results

A change in export share should surpass a certain minimum to count as a significant and non-trivial effect. Our analysis uses a criterion of 5 percentage points (0.05) as a minimum. 57 products had an increase in EU export share, while 36 had a reduction. Hence, the question is: Were the products with an increased export share to the EU the same ones that received a tariff reduction? The answer is that 41 of the 57 products (72 percent) that increased their share of EU exports were the ones that had received a tariff concession. This is close to the share of products that got a tariff concession (69 percent), and thus close to what would have happened if changes in export share had been entirely random. 24 of the 36 products (67 percent) that had a reduction in export share to the EU received a tariff concession. This is also close to the 69 percent of the total products receiving a tariff concession. 72 percent is higher than 67 percent, but the difference is not significant. The difference between the shares is $0.72 - 0.67 = 0.05$, and the standard deviation of the difference is:

$$p = \frac{\text{increase with tariff concession} + \text{reduction with tariff concession}}{\text{total increase} + \text{total reduction}} = \frac{41 + 24}{57 + 36} = 0.6989$$

$$STD = \sqrt{p(1-p) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)} = \sqrt{0.6989(1-0.6989) \left(\frac{1}{57} + \frac{1}{36} \right)} = 0.0977$$

The standard deviation of 0.0977 is much higher than the difference between the shares of 0.05, and we cannot detect any significant changes. Lowering the arbitrary criterion to 4 and 3 percentage points does not change the conclusion. Table 4 summarizes our findings.

Arbitrary criterion	5 %	4 %	3 %
Products with increased share	57	58	61
Products with decreased share	36	36	36
Share of products with tariff concessions, increased EU export share (S1)	0.72	0.71	0.70
Share of products with tariff concessions, reduced EU export share (S2)	0.67	0.67	0.67
S1-S2	0.052	0.0402	0.038
Standard Deviation of S1-S2	0.097	0.097	0.096

Table 4 - Test for whether tariff concessions changed the EU export share for fish products

We cannot find any significant correlation between tariff concessions granted to Norwegian fish exports and an increased export share to the EU. This result indicates that the effects of a reduction in tariffs through a Norwegian EU membership will be minor. Furthermore, our analysis and Hannesson (2000) have examined different time periods, and still reached the same results. This is perhaps an even stronger indication that the effects of tariff reductions in the EEA agreement have been limited.

6.1.3 Limitations of the analysis

Whether these findings are due to the fact that tariff reduction has a limited effect on exporters' profit margins, or due to other relevant factors (e.g. changes in fish stocks), is not possible to answer with our data. It is perhaps most sensible to say that other factors such as changes in fish stocks, price variations, and market trends, which we are not controlling for,

have some effects on our results. We are looking at changes in value of the EU share of exports. However, an analysis of changes in the quantity exported to the EU could have perhaps changed the outcome, and we could have excluded price change as an external factor.

Our analysis looks at all species of fish combined, but greater insight could have been gained by taking a closer look at the effects for individual species. With this approach, it would have been possible to detect individual products that may benefit from the tariff concessions in the EEA agreement.

Salmon¹⁶ was not granted a tariff concession in the EEA agreement, but was instead given a compensation quota (6,100 tons) based on historical exports to the EU. This quota was probably not large enough to have any effect on the salmon industry and LSG (see 7.2.2, Quotas). It is therefore impossible to conclude whether a complete removal of trade barriers on salmon would have any effect for LSG.

A further examination of the tariff concessions granted by the EEA agreement seems to be of minor importance for our thesis, since salmon was not affected. Nevertheless, our analysis is an attempt to lay out some empirical indications of the tariff's effect.

¹⁶ 68.8 percent of LSG's revenues in 2008 (LSG's Annual Report 2008).

7. How LSG will be affected by EU membership

The purpose of this chapter is to determine how a Norwegian EU membership will affect LSG. Supply and demand relationships with factors such as tariff and non-tariff barriers, access to resources, changes in income and prices, and other factors will be discussed. The discussion is based on theory, facts and research.

7.1 The effects of tariffs on LSG's export

The empirical study on the effects of tariff concessions granted on fish exports through the EEA agreement (see 6.1.2, Findings and results) did not find any significant results to indicate that a reduction in tariffs had positive effects on fish exports to the EU. Our findings are supported by other research (e.g. Hannesson 2000 and Steinshamn et al. 2001).

On the other hand, Melchior (2007) concludes that an EU membership will result in a tariff reduction of 0.4 billion NOK, and the estimated demand will increase by 1.5 billion NOK, which, in addition, excludes the effects of other factors such as antidumping measures. His conclusion is therefore that EU membership will provide a clear overall gain for Norwegian fish producers.

Research thus supports and refutes our findings, which illustrates the difficulty in evaluating the effect of a tariff removal with EU membership. Therefore, it is possible that tariffs are a trade restriction for LSG, and it is worthwhile to further discuss tariff barriers from LSG's perspective. Here follows a discussion of how EU membership can affect LSG with respect to changes in free trade agreements and LSG's production in Scotland and Sweden.

7.1.1 Free trade agreements (FTAs)

Studying the effects of a Norwegian EU membership requires an analysis of the changes this will incur for the bilateral free trade agreements (FTAs) that Norway currently has through the EFTA (see 4.2.1, The Economic Free Trade Association (EFTA)). Norway can lose six FTAs

as a result of EU membership. On the other hand, Norway will gain 8 FTAs which are not covered by the EFTA agreement. However, the FTA agreements of the EU total only 0.06 percent of the Norwegian fish export, while the FTA agreements from EFTA total 1.04 percent. This also illustrates that none of these FTA agreements are important for Norwegian fish exporters in general (Melchior 2007). The market data of LSG (see 3.5.1, Sales per market) likewise show that none of the FTA agreements are important for LSG specifically.

No matter what happens to the FTA agreements, Helge Møgster states that changes in FTA agreements are of minor importance, because the EU is the most vital market for LSG.¹⁷ The above discussion and the view of LSG's shareholders imply that a change in FTA agreements would not be a very important aspect of EU membership.

7.1.2 LSG's production in Scotland

A fundamental aspect of LSG's structure is the company's farming and processing activities inside the EU area through Norskott Havbruk AS in Scotland (see 3.4.3, Affiliated companies). This operation is not likely to be strongly affected by an EU membership, if we assume that LSG's corporate structure would not change with a Norwegian EU membership. However, as figure 9 illustrates, the Scottish production capacity of LSG added up to only 11,400 gwt¹⁸ (11 percent) of a total capacity of 104,100 gwt in 2008.

¹⁷ Interview with Helge Møgster, 18.03.2009.

¹⁸ Tons gutted weight

Company	Ownership share	Licences No	Mill. smolt individuals	2007 GWT	2008 GWT	2009E GWT
Lerøy Midnor AS	100 %	30	9,5	29 200	29 100	35 000
Lerøy Aurora AS	100 %	17	5,0	17 100	17 200	20 500
Lerøy Fossen AS	100 %	7	4,2	9 100	6 500	10 000
Lerøy Hydrotech AS	100 %	24	7,0	20 100	23 000	22 000
Lerøy Austevoll AS*]	100 %	27	10,0	13 400	16 900	22 500
Total Norway		105	35,7	88 900	92 700	110 000
Norskott Havbruk AS (UK) **	50 %		6,0	12 000	11 400	13 000
Total			41,7	100 900	104 100	123 000

Consolidated, farming
 Affiliated, farming
 *Acquisition 2007, consolidated from 010407 **LSG's share

Figure 9 - Production capacity of LSG in Norway and Scotland (Source: LSG annual report 2008)

Arne Møgster states two key factors behind the company's decision to establish in Scotland. First, market access and market prices in the UK can be more favorable because of the preferences of UK retailers. Second, the company obtains better EU market access because Scottish salmon can be exported inside the EU area without any tariffs whatsoever. Nevertheless, Arne Møgster also says that the fraction of Scottish produced fish compared to fish produced in Norway is not likely to increase considerably in the future, as Norway has more resources for growth potential.¹⁹

7.1.3 LSG's processing in Sweden

LSG also operates a processing factory in Sweden through Lerøy Smøgen Seafood AB (see 3.4.2, Production). The company's establishment in Sweden enables it to avoid additional tariffs on processed products. LSG can for instance export whole salmon from Norway with a 2 percent tariff, and then process it inside the EU (Sweden); this allows LSG to distribute the fish without the higher tariff on processed salmon, which is 5.5 percent to the EU area. The tariff savings are larger than the difference between the two rates suggests, since the effective tariff on processed products is higher than the nominal tariff (see 5.2.1, The effective rate of protection). Since we have no financial data on LSG's operations in Sweden, we are unable to investigate the extent to which EU membership will affect LSG's firm

¹⁹ Interview with Arne Møgster, 18.03.2009.

performance, other than eliminating the 2 percent tariff on whole salmon. Nevertheless, lower tariffs will not necessarily imply more processing in Norway, since Norway may lack a competitive advantage in this field (see 7.5.1, Input Intensity).

Summary of the effects of tariffs on LSG's export

The effect of lower tariffs on fish products exported to the EU seems to be minor, according to our own empirical analysis (see Chapter 6). However, other research shows that EU membership will provide a clear overall gain for Norwegian fish producers. A change in FTA agreements with EU membership seems to be of limited importance, a conclusion that is supported by research and LSG shareholders. By being established in Scotland and Sweden, LSG has already taken some strategic actions to avoid the drawbacks of Norway not being a member of the EU. Still, the level of activity in Scotland is on a much smaller scale than in Norway.

7.2 The effects of non-tariff trade barriers on LSG's export

In addition to tariffs, any restriction in trade with the EU will saddle Norwegian producers with extra costs. This section discusses what a Norwegian EU membership can imply for LSG with respect to a removal of non-tariff trade barriers, such as antidumping countermeasures and quotas.

7.2.1 Antidumping and minimal import prices (MIP)

The EU has forced antidumping countermeasures on Norwegian fish exporters several times. The first allegations of dumping²⁰ emerged in December 1989 when Scotland accused Norway of dumping salmon in the EU market. Currently, there are no antidumping countermeasures in effect on the Norwegian fish export to the EU, as the EU removed the

²⁰ Dumping is selling exports at a price that is too low – less than normal value (or “fair market value” as it often is called in the United States). (Pugel 2007:209)

last MIP on salmon in July 2008 (www.regjeringen.no). This does not imply, however, that it cannot be re-imposed in the future. In this section, we will focus primarily on minimal import prices (MIP).

In June 1997, Norway and the European Commission (EC) signed a five-year agreement called the Salmon Agreement, which contained an MIP (2.925 EUR per kg) on Norwegian salmon, limits on the export volume from Norway to the EU market, and increased export taxes on Norwegian salmon (www.regjeringen.no).

Lorentzen (2009) revealed that the Salmon Agreement primarily imposed welfare losses on EU consumers. In sum, the effect of the agreement for the EU was negative, since the consumers sustained a loss three times greater than the moderate gains of EU producers. The effect on the Norwegian industry was positive in the short run, but in the long run, the trade restrictions hindered the Norwegian fish farming industry to take advantage of the competitiveness and increased the exposition of economic risk.

In their study, Asche and Steen (2003) tested whether the Salmon Agreement resulted in an increase of Norwegian market power. Since Norway had a share of about 50 percent of the farmed salmon production at the time of study, the authors argue that Norway should be a dominant player when the behavior of the fish farmers is coordinated. The results of the paper suggest that Norway regained market power and even increased it due to the Salmon Agreement. The authors point out that Norwegian fish farmers saved the fee of 13 percent that was imposed and gained a mark-up that was even higher (14-15 percent). The Salmon Agreement therefore supported the salmon price in the EU, however, at the cost of lower consumer surplus in the EU. It should be noted that part of this loss of consumer surplus has been distributed to the Norwegian fish industry outside the EU as economic rent.

Figure 10 illustrates the market price on salmon compared with the MIP imposed by the EU. The market price has varied between 17.5 to 43 NOK per kg since 2000. Our illustration shows that the market price on salmon has stayed above the MIP during most of the periods the EU has imposed them. It should be noted that the MIP was removed between May 2003 and February 2005 (www.regjeringen.no) and the market price was below our calculated

“fictitious MIP” during most of this period.²¹ The reason why this is the case could be that the producers adjust the supply according to the MIP or that exporters employed creative methods to avoid the MIP (see 5.3.2, Minimal import price (MIP))

During the salmon agreement it was reported several creative methods to avoid the MIP-system (Asche et al. 2005:24).

Another possible explanation is problems related to price reporting, which we will discuss below.

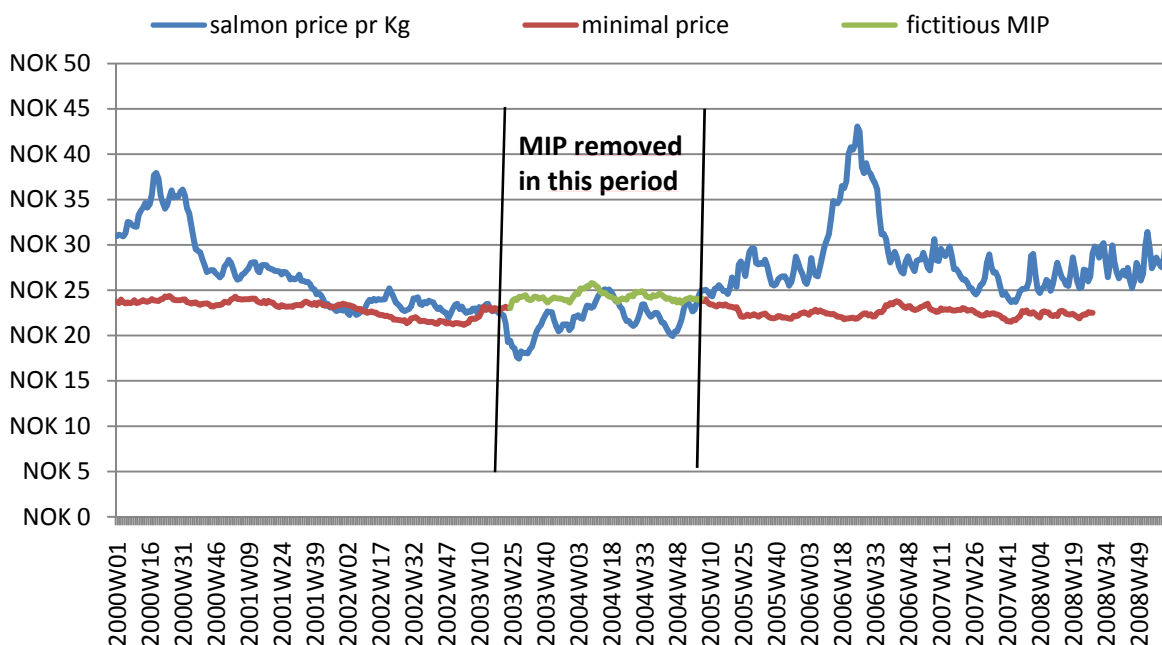


Figure 10 - The market price on salmon and the minimal import price (MIP) (fictitious MIP is calculated with the €2.925 MIP from May 2003 and varies with the exchange rate)²²

²¹ “Fictitious MIP” is calculated with actual exchange rate and the last registered MIP (€2.925).

²² The graph is the authors “best estimate” and is calculated with data from the following sources; Salmon price per Kg. are from Statistics Norway (www.ssb.no). The minimal price is from Norwegian Ministry of Fisheries and Coastal Affairs and was 2.925€ between January 2000 to May 2003, 2.85€ between February 2005 to June 2005 and 2.81€ between June 2005 to July 2008 (www.regjeringen.no). “Fictitious MIP” is calculated with the MIP of €2.925. Exchange rates are from Norges Bank (www.norgesbank.no). The exchange rate used is from Mondays of every week.

Kielland (2006) discusses problems related to price statistics when the EU has forced MIPs on Norwegian fish exporters. He illustrates how in week 4 in 2002, the price reported by SSB was 22.10 NOK per kg, while FHL reported a price as low as 15.4 NOK per kg in the same period.²³ This is a difference of 6.70 NOK per kg. The reason why the difference is so large is perhaps because Norwegian fish exporters are not reporting sales below the MIP, even if they do so in reality. Since FHL is not a public authority, exporters may have reported the actual price to FHL, which is lower than the MIP (Kielland 2006). This implies that Norwegian fish exporters may have sold salmon at a lower market price than figure 10 suggests.

According to Arne Møgster, the antidumping countermeasures of the EU have imposed few trade limitations for LSG. However, he states that disputes with the EU have resulted in unnecessary transaction costs, primarily due to administrative costs.²⁴

7.2.2 Quotas

Norwegian fish exports have been limited on several occasions by different types of quotas. A quota specifies the total volume which can be imported (see 5.3.1, The import quota). One example of a quota is the Salmon Agreement's tentative limits on export volume from Norway to the EU market. Another type of quota, and the focus of this section, is the so-called compensation quota. A compensation quota is a benefit for the exporting country because of reduced trade costs.

As earlier stated, Norway has received compensation quotas in negotiations with the EU (in 1986, 1995, 2004, and 2007) (see 4.2.1, The European Free Trade Association (EFTA)). For instance, when the EFTA countries Finland, Sweden, and Austria joined the European Union in 1995, negotiations between Norway and the EU resulted in compensation for the reduced market access. For LSG's most important product, salmon, the compensation quota was 6,100 tons (www.seafood.no). Sissener et al. (2003) studies how the quotas affect trade with

²³ Last year, FHL decided to no longer publish the so-called "FHL price." Therefore, we could not analyze the differences between the "SSB price" and the "FHL price" (www.fhl.no).

²⁴ Interview with Arne Møgster. 18.03.2009.

the EU by looking at trade development year by year from 1998 to 2001, with an overview of quotas, tariffs, the amount of quotas spent, and when they were used.

Of the 119 products mentioned, 33 were not used, 65 were used within the first five months, and the rest were used at some point before the end of the year. About two-thirds of the quotas are fully utilized, and for these products, exports to the EU are limited by the tariff. Quotas imposed in the first part of the year were for salmon, herring, mackerel, and pollock. The quota on salmon was imposed in January every year. The tariff-free quotas are valuable, as they transfer revenues from the EU to Norwegian fish exporters. The value of this transfer is however less than the quota indicates, because the exporters have to position the export to exploit the tariff-free quotas. Companies will strive to acquire as much of the quota as possible, which results in increased transaction costs. The trade restrictions are on the same level as tariffs when the quota is used. Recent data show that for salmon, the compensation quota was already used as of January 8, 2009 (www.seafood.no). When the quota is used, LSG pays the 2 percent tariff for exporting salmon to the EU. We do not have any data to indicate whether LSG has access to part of this compensation quota. However, the fact that the entire compensation quota (6,100 tons) for Norway represents only 6.7 percent of LSG's total salmon production in Norway, along with the fact that it is used in January every year, indicates that the quota is too small to make an impact on LSG.²⁵ This implies that the compensation quotas of 1995 would only to a slight extent reduce LSG's potential gains from any removal of tariffs brought about by EU membership.

Summary of the effects of non-tariff trade barriers on LSG's exports

According to the studies presented in this section, the antidumping countermeasures contained in the Salmon Agreement have primarily harmed EU consumers. Lorentzen (2009) discusses some negative aspects for the industry, such as increased economic risks and preventing the full utilization of competitiveness. Asche and Steen (2003) argue that Norway is a dominant player of farmed salmon, and find that the industry even gained an economic rent. Figure 10 shows that the market price of salmon was higher than the MIP during the

²⁵ $(\text{Total Import Quota} = 6,100 \text{ tons}) / (\text{LSG's Total production in Norway} = 92,700 \text{ tons}) = 0.067$. The total import quota is taken from www.seafood.no, and the total production in Norway is taken from figure 9.

periods the EU had imposed an MIP, but Kielland (2000) suggests that the market price for Norwegian fish exporters may have been lower. Asche et al. (2005) claims that several creative methods were used to avoid the MIP-system. According to Arne Møgster, the EU's antidumping countermeasures have caused only slight trade limitations, but have led to considerable unnecessary transaction costs. EU membership will remove the tariff-free compensation quotas that Norway was granted when some former EFTA countries joined the EU. About two-thirds of the quotas are fully utilized, and for these products, the export to the EU is limited by the tariff. The quota on LSG's most important product, salmon, is too small to have any significant impact on potential gains from tariff removals through EU membership.

7.3 Changes in income and prices

According to theory, an important effect of international economic integration is that the economic welfare of the integrated countries increases (Pugel 2007). This section discusses possible changes in income and prices due to a Norwegian EU membership and how they might affect LSG. It should perhaps be clarified that these effects are different, but as the discussion below explains, they are both mainly a result of lower Norwegian import tariffs on agricultural products.

7.3.1 Income changes

Disposable income is a standard factor to explain the demand for different goods, and consumer choices depend on income elasticity.²⁶ For most values of disposable income, fish has been evaluated as a normal good (Steinshamn et al. 2001), which means that higher disposable income among consumers increases the demand of the good. The income elasticity of fish has been estimated to be 0.41 for fresh fish and 0.11 for frozen fish (Bourlakis and Weightman, 2004). This implies that the demand for fish will increase or

²⁶ Defined as a percentage change in the quantity demanded resulting from a 1 percent increase in income (Pindyck and Rubinfeld 2006:34).

decrease with changes in income and will have an effect on the consumption of LSG's products.

A Norwegian EU membership would most likely have limited effects on the income of other EU countries, because Norway is a small country in this setting. However, the purchasing power of Norwegian households can increase significantly if trade restrictions for fish and agricultural products are reduced through EU membership. This increased purchasing power would mostly stem from reduced protectionism of the agricultural industry and the cheaper food resulting from this (Gaasland 2004).

7.3.2 Price changes

In addition to income, another factor which is a key determinant of demand is a product's price. It is important to remember that many of the most important agricultural products sold in Norway are expected to face a price reduction anywhere from 20 percent to more than 50 percent with an EU membership (Mittenwei 2003). It is also worth mentioning that Norwegian tariffs currently range from between 200 to 500 percent on central agricultural products.

Theory also predicts a fall in fish prices in the EU market if trade restrictions are removed, with the result that LSG will face less competition from agricultural products in the EU. However, the degree of change in EU fish prices is more uncertain, because the tariffs of Norwegian fish exports to the EU, ranging from 0 to 20 percent, are much lower than the tariffs of Norwegian imports on agricultural products.

A fall in the price of a good has two effects:

- 1) *Consumers will tend to buy more of the good that has become cheaper and less of those goods that are now relatively more expensive (substitution effect).*
- 2) *Because one of the goods is now cheaper, consumers enjoy an increase in real purchasing power (income effect). (Pindyck and Rubinfeld 2006:116)*

Implications of changes in income and prices

The purchasing power of Norwegian households can increase significantly with a Norwegian EU membership. As mentioned, this would mainly be a result of reduced protectionism of the agricultural industry and cheaper food following from this. The implication here is that LSG may face changes in the Norwegian market, which is the company's second-largest market with a 17 percent revenue share (see 3.5.1, Sales per market). On the one hand, LSG could face increased competition from cheaper agricultural products, but on the other, LSG could also benefit from consumers' increase in real purchasing power. It is not possible for us to determine which of these effects will be stronger, but it is important to note these possible outcomes.

7.4 Access to resources

LSG and other Norwegian fish companies have a natural competitive advantage because of their optimal access to resources (see 2.1.3, Norway – a fishery nation). An important debate in the Norwegian fish industry is how EU membership will alter access to resources, and on this question, opinions are divided. This section discusses how an EU membership can affect policy, and what this will mean for LSG's access to resources.

The Norwegian Ministry of Fisheries and Coastal Affairs provides and administers access to resources through regulations of fish farming licenses and fishing quotas (www.regjeringen.no). The Common Fisheries Policy (CFP) is the European Union's instrument for managing fisheries and aquaculture (www.europa.eu). The Norwegian Ministry of Fisheries and Coastal Affairs states that EU policy will most likely not have any particular consequences for fisheries in Norway, with or without Norwegian EU membership. The Ministry's reasoning is that there are no significant differences in the management of fisheries and aquaculture in the EU and in Norway. The conservation goals for the fish stock are comparable, and the instruments are similar, with few exceptions (www.regjeringen.no). Frank Asche supports this view and states his belief that EU policies will not have an important effect on the Norwegian fish industry. He argues that it will not for instance be easier to establish an aquaculture industry in Norway. The Norwegian Ministry of Fisheries

and Coastal Affairs will continue to give out licenses for fish farming on the same premises as before EU membership.²⁷

A report from FHL, an organization which is in favor of EU membership, indicates that the EU's fishing policy is becoming increasingly similar to that of Norway (www.fhl.no). Nevertheless, parts of the Norwegian fish industry are not in favor of EU membership. They argue that, for instance, Norway will lose the right to control its own resources, and that the EU will harm the Norwegian fish industry because the Union is looking out for other interests than Norway's (www.kystpartiet.no).

It is difficult to evaluate how EU membership will affect LSG's firm performance with respect to its access to resources. The above discussion illustrates that EU membership will probably not bring great consequences for the industry, but some parts of the industry disagree with this assessment.

7.5 Other factors

7.5.1 Input intensity

Input intensity is the rate between the input prices on capital and labor (Pindyck and Rubinfeld 2006). Since Norway is already a member of the "Internal Market" through the EEA agreement, where labor and capital can move freely between member countries (see 4.2.2, The European Economic Agreement (EEA)), any effects of EU membership on input intensity will most likely be limited. In Norway, the price on capital is relatively cheaper than the price on labor, which gives the incentive to have a more capital intensive production than in most other countries (Steinshamn et al. 2001).

The prices on input can be divided into capital costs and labor costs. It is important to be aware of the close relationship between return on capital and competitiveness. The ability to compete does not only mean taking market shares from your foreign competitors, but you also need to offer the domestic investors the same or better return on capital than other

²⁷ Interview with Frank Asche 06.03.2009.

domestic markets (Steinshamn et al. 2001). The combination of a higher cost of labor, high pressure in the Norwegian labor market, trade barriers (higher tariffs on processed products), and an organizational structure far away from the markets limits the profitability of the Norwegian processing industry (Henriksen and Bendiksen 2008). This implies that processing fish is often more profitable in countries with lower labor costs, since the processing industry has to create a competitive return on capital.

The elimination of tariffs on processed products brought by an EU membership will therefore not necessarily increase LSG's export of processed products from Norway, simply because Norway may lack a competitive advantage in this area.

7.5.2 Infrastructure

Norway has a comparative advantage in infrastructure in fish farming because of the country's decentralized settlement. Norway's well-developed infrastructure in remote areas makes most of the coastline available for the farming industry and gives a competitive advantage, especially against Chile. In the processing industry, the situation is reversed. Norway's decentralized settlement leaves it at a competitive disadvantage because of the relatively long distances to important markets (Henriksen and Bendiksen 2008). One question is therefore how EU membership will change the infrastructure. The development of infrastructure between member countries is a central element of EU policy (www.europa.eu). An upgrading of the infrastructure in Norway would be beneficial for LSG and other Norwegian fish exporters. Nonetheless, it is uncertain whether EU membership will change the Norwegian infrastructure for the better or worse from the perspective of the fish industry.

7.5.3 Exchange rate risk

In 2006, the analysis company Kontali Analyse AS found that when comparing the Norwegian kroner against the euro, the exchange rate risk for Norwegian exporters was very limited (Kontali Analyse 2007). On the other hand, Helge Møgster states that exchange rate risk is a

considerable factor for LSG. Whether the risk is limited or not, a Norwegian EU membership does not imply that Norway will convert to the euro. As long as Norway does not convert to the euro, EU membership will not have an important effect on the exchange rate risk faced by Norwegian fish exporters.

Summary of other factors

EU membership will have a limited effect on the input intensity for Norwegian fish exporters because Norway already participates in the Internal Market through the EEA agreement. Infrastructure is important for the competitiveness of fish production with respect to farming and processing, but it is uncertain how EU membership would affect the infrastructure in Norway. The exchange rate risk faced by Norwegian fish exporters will not be impacted greatly, as long as Norway does not convert to the euro.

8. Market dynamics and Marketing activities

If EU membership is to change the playing field for Norwegian fish exporters, it is important to evaluate whether LSG will be able to defend or increase its market share in the EU. In this section, we will try to investigate how market dynamics and marketing activities in the fish industry may affect LSG's firm performance with EU membership.

8.1 Market dynamics

8.1.1 Large firms drive growth in new markets

The difference between large and small firms is a factor that explains the expansion of Norwegian fish exports. The results of Medin (2006) indicate that large firms play a major role for entry in smaller markets. Hence, smaller firms do not primarily seek new markets with few other Norwegian exporters; they rather tend to cluster in markets with many firms present. Evidence also suggests that newcomers in the export business tend to enter the larger markets (Melchior and Medin 2002). This also adds to the evidence suggesting that it is not newcomers and small firms that drive growth in new markets.

LSG is certainly a large firm, and according to the study presented above, LSG should therefore be able to drive growth in new markets. For example, LSG emphasizes that they have led the way into new markets and their operations in United States and Japan are already mentioned (see 3.3, Business goals and strategy). LSG has had operations based in Turkey since 2005 (see 3.4.3, Affiliated companies). Turkey is a relatively small market²⁸ and the company's establishment in this country is consistent with Medin (2006) indicating that large firms play a major role for entry in smaller markets. LSG claims that the investment in Turkey is developing into a very interesting and profitable venture (LSG Annual Report 2008), but

²⁸ Norwegian fish exports to Turkey totaled 238 million NOK in 2008 (www.ssb.no).

we have no market data to support or illustrate this statement. Improved terms of trade could perhaps motivate LSG to enter small markets in Romania or Bulgaria, for example.²⁹

8.1.2 Established firms drive growth in large markets

When exports to a market change, is this brought about through the entry of new firms or the expansion of sales by firms that are already present in the market? Melchior (2006) finds that growth in large markets is explained to a large extent by the average growth in sales per established firm. France is the largest salmon market inside the EU (Kontali Analyse 2006), and LSG is established in and has a significant share of this market (Popova 2005). We do not have any detailed data on LSG's development in this market to illustrate whether or not LSG has defended its market share during the growth in this large market. However, LSG's significant market share indicates that it should be able to expand if EU membership brings significant change.

8.1.3 Economies of scale and scope

A paper by Melchior and Medin (2002) in which 81 Norwegian seafood exporters were surveyed suggests that there are economies of scale and scope in their exporting activity. This is primarily due to 4 factors:

- Fixed costs of market entry
- Learning through experience
- Seafood exports' strong reliance on personal networks
- Externalities between firms, such that one exporter benefits from the others via learning.³⁰

²⁹ In 2008, Norway exported salmon to Bulgaria and Romania at a value of 32 million and 7 million NOK, respectively (www.ssb.no).

³⁰ An externality exists when one's activity leads to direct costs or benefits to anybody who is not part of the marketplace's decision to undertake the activity (Pugel 2007:269).

The implications of the findings may suggest both benefits and drawbacks for LSG from the improved terms of trade a Norwegian EU membership may bring. First, the fixed costs of market entry for LSG are not likely to increase drastically because of the strong presence LSG already has in the EU market. In addition, most Norwegian fish exporters only sell to a few countries, and the median number of export destinations was four (Melchior 2006; Medin 2006). This clearly implies that an individual firm cannot enter all markets, and that there are costs to be borne and thresholds to be surpassed in order to capture new markets. This may indicate an advantage for LSG, as a Norwegian EU membership will certainly not eliminate all entry barriers, and LSG is established in many markets. Second, it is reasonable to assume that LSG has already achieved a great deal of learning through experience (through e.g. the worldwide establishment of sales offices; see Chapter 3, Lerøy Seafood Group), which can equip LSG with better knowledge than their new competitors of how to improve their margins with EU membership. Third, LSG undoubtedly has strong personal networks in the EU, with sales subsidiaries and sales offices in their most important markets. However, externalities between firms indicate that other exporters may benefit from the experience that LSG has already acquired in the EU area.

8.2 Marketing activities

8.2.1 Product differentiation

In their classic paper, Gardner and Levy (1955) wrote that the long-term success of a brand depends on marketers' abilities to select a brand meaning prior to market entry, operationalize the meaning in the form of an image, and maintain the image over time.

If LSG can differentiate its products and be associated with higher quality, LSG can sell products for a higher price or be the preferred choice at a given price (see 5.1.2, New trade theory). Certain types of salmon, shrimp, and other seafood can be classified as luxury goods at certain price levels (Steinshamn et al. 2001), but seafood is usually held to be less driven by hedonic or positive sensory attributes than other food products (Olsen 2006; Asche 2006). According to Asche, there is nothing that would indicate that LSG has any sort of

market power. He states that LSG might have some profit margin, but that it will have to adjust to the market price like any other player in the market.³¹

Nevertheless, LSG has definitely been running a differentiation strategy. Currently, LSG is developing a sushi/sashimi salmon for Japan while aiming at becoming the preferred choice in high-end sushi restaurants and supermarkets, thereby being able to charge a higher price than “regular” fresh Norwegian salmon (www.leroy.no). Another example of this strategy is LSG’s recent hiring of the famous Norwegian chef, Fredrik Hald, and a brand builder specialist, Pål Erik Michelsen, to develop new ranges of products in Norway (www.butikkpraxis.no). The motivation behind this marketing strategy is to offer fish products that are easy to prepare and cook. Consumers are demanding convenience (see 2.1.2, The world fish market), and LSG’s approach is driven by the need to differentiate the company from competitors.

According to the above discussion, product differentiation in the fish industry seems to play a minor role, and actors must take prices as given in most markets. However, there are some indications that product differentiation and company reputation might be important. It may be argued that a removal of the 5.5 percent tariff on processed products could induce LSG to increase exports of differentiated products. Kristine Alnes states that the tariff on processed products limits their exports to the EU.³² This statement is supported by LSG’s main shareholders.³³ On the other hand, it has been argued that Norway does not have a competitive advantage in processing fish (see 7.5.1, Input intensity), and hence the changes in export for processed products would perhaps be minor.

³¹ Interview with Frank Asche, 06.03.2009.

³² Interview with Kristine Alnes, 20.03.2009.

³³ Interview with Arne Møgster, 18.03.2009.

8.2.2 Country branding

Norwegian actors have been poor at networking in the UK market, and having “Norwegian seafood” as an attribute can only become important if the interacting actors decide it is an important dimension (Cantillon et al. 2006). The Norwegian Seafood Export Council and LSG are trying to brand Norwegian salmon as superior to that of other countries. They have so far succeeded in Japan, but not in France, where Scottish salmon is perceived as the superior product (www.forskningsradet.no).

Kleppe et al. (2001), and Kleppe and Mossberg (2002) have discussed how concepts in the branding literature can be applied to country branding in relation to the fish industry. Nevertheless, research has found that such attributes as price, color, texture of flesh, and fat content are far more important for consumers’ perceptions of quality than country of origin (Ottessen 2006).

8.2.3 Market knowledge

The research of Ottessen (2006) has revealed that a relatively large proportion of the managers of Norwegian fish exporters do not know how consumers perceive the importance of quality attributes of fish products. Closeness to consumers in the form of sales to the respective markets, or in terms of being located further downstream in the value chain, was not associated with more accurate knowledge on the managers’ part. It was also found that a differentiation strategy does not necessarily mean more accurate knowledge about consumers. Thus, location in the chain and having a firm strategy do not appear to influence managers’ knowledge of consumers (Ottessen 2006).

This implies that even though LSG is the most vertically integrated downstream company in the industry (see 3.1, Present state of LSG ASA), LSG’s market knowledge is not automatically better than the company’s competitors. Therefore, it would not necessarily be better positioned than competitors in the event of EU membership.

Summary of market dynamics and marketing activities

If EU membership changes the export structure, the resulting expansion of Norwegian exports could be seized upon by LSG or by new or other established players in the industry. Results of research show that large firms play a major role for entry in new markets, and that growth in large markets is to a large extent described by growth in average sales per established firm. In addition, there are economies of scale and scope in the Norwegian fish exporting activity. In sum, this indicates that LSG as a large and established firm will be in a favorable position compared to newer and smaller competitors if there is a change in markets.

The role played by product differentiation in the fish industry seems to be minor, and actors must take prices as given in most markets. However, there are indications that product differentiation might carry some significance. Research has discovered concepts in the branding literature that can be useful for the fish industry's efforts at country branding, but other factors such as price, color, the texture of flesh, and fat content seem to be more important. Research finds that closeness to consumers is of minor importance when it comes to market knowledge.

9. Structural changes of Norwegian fish exports to Poland

Several countries joined the European Union in 2004 and 2007 (see 4.1, The European Union). Among these countries, Poland is the largest and most important single market for Norwegian fish exporters like LSG (www.seafood.no). Poland entered the EU in 2004 and went from being a third country with a bilateral trade agreement with the EFTA to a part of the EU tariff union. This chapter presents changes in the Norwegian fish exports before and after Poland's accession to the EU. The purpose of the chapter is to augment our understanding of how Norwegian fish exports are affected by new EU members from Eastern Europe. First, we give a general overview of Polish fish imports and Norway's fish exports to Poland. Then, we look at the most important fish products exported from Norway to Poland.

9.1 Polish fish imports

Poland’s total import of fish and fish products has increased steadily over the last few decades. The value of the import has increased more than the quantity. The reason for this may be a shift towards more expensive products, or that the exporters have increased their prices in order to reflect increasing income levels. With our data, we will show a shift in consumption patterns towards more expensive products. Whether exporters have been able to obtain higher prices is not possible to answer with our data. It seems as though the steady increase in imports has become even more marked after 2004, which may indicate that Poland’s EU membership has led to an increased trade of fish. We have calculated the average growth from 1991 to 2006 at 23 percent, and when we exclude the last three years of data and calculate the growth from 1991 to 2003, the average yearly growth is 21 percent. The average yearly growth from 2004 to 2006 is 31.4 percent.³⁴ Data from 2007 and 2008 are not yet available, and we cannot therefore test to see whether the increased growth after 2004 is a structural shift or just a normal variation.³⁵

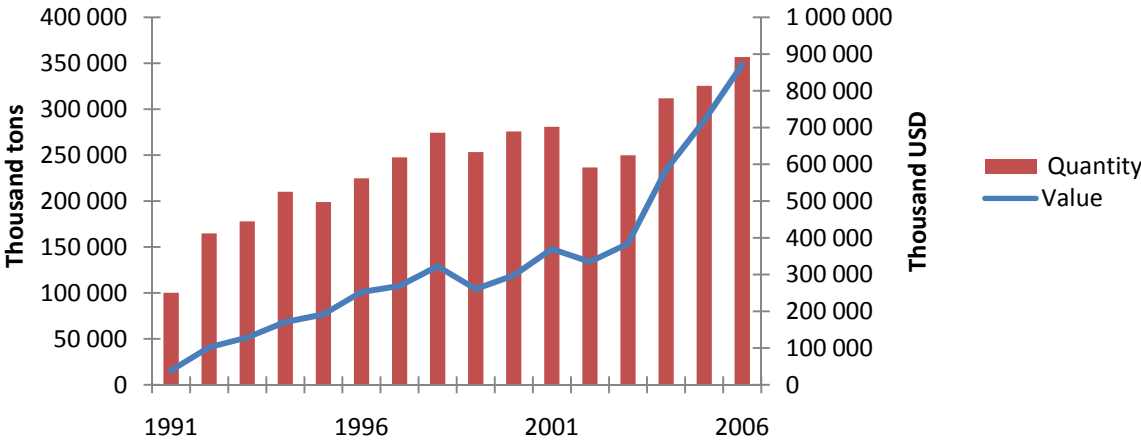


Figure 11 - Poland’s total import of fish
 (Source: Food and Agricultural Organization of the United Nations, www.fao.org)

³⁴ Calculated with $i = \left(\frac{K_t}{K_0}\right)^{\frac{1}{t}} - 1$, where i = average growth rate, K_0 = Imports in period 0, and K_t = Imports after t periods (Sydsæter 2006).

³⁵ We created an estimated trend and calculated the standard deviation for the period. When we are testing for structural changes in the Polish imports of fish from 1991 to 2006, including dummies for the years 2004, 2005 and 2006, we find that all the dummies are jointly significant and they all give extra explanation to the model. This is a clear indication that the change in exports is a structural shift and not just a normal variation. However we have too few observations after 2004 to draw a conclusion. Tables and graphs are enclosed in appendix 2.

9.1.1 Norwegian share of Polish fish imports

The Norwegian share of Polish fish imports has declined in recent years. In terms of value, market share dropped from 58 percent in 2000 to 31 percent in 2001, and has stabilized between 30 and 40 percent after 2001. The market share in terms of quantity decreased from 61 percent in 1999 to 21 percent in 2004, before increasing to 25 percent in 2005 and 2006. Norway’s decreasing share shows that more and more Polish imports are coming from other countries. We do not have any data on the other countries that export fish to Poland, but Arne Møgster states that an increasing share comes from Denmark and Russia.³⁶

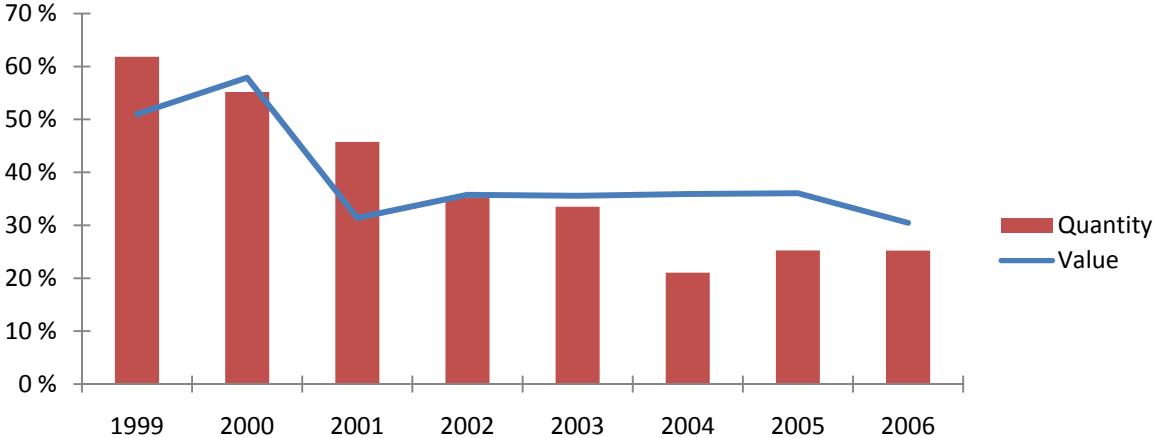


Figure 12 - Norwegian share of Polish imports of fish³⁷
 (Source: Food and Agricultural Organization of the United Nations, www.fao.org)

³⁶ Interview with Arne Møgster, 18.03.2009.

³⁷ This graph is calculated with data from the Food and Agricultural Organization of the United Nations (www.fao.org) and Statistics Norway (www.ssb.no); we use the exchange rate index from Norges Bank (www.norgesbank.no).

9.2 Norwegian fish exports to Poland

Norwegian fish exports to Poland have gone from 152,000 tons exported with a value of 935 million NOK in 1999 to 65,600 tons valued at 945 million NOK in 2004. Despite a large drop in quantity, the value of the export stayed around the same level. Ever since Poland joined the EU in 2004, there has been a steady increase in exports in terms of both quantity and value. However, value has grown more than quantity. The average export price of all fish products combined was 6.05 NOK per kg in 2000 and 18.78 NOK in 2007.³⁸ One reason behind this increase is the change in Polish consumption patterns towards more expensive fish products like salmon (Failler 2007).

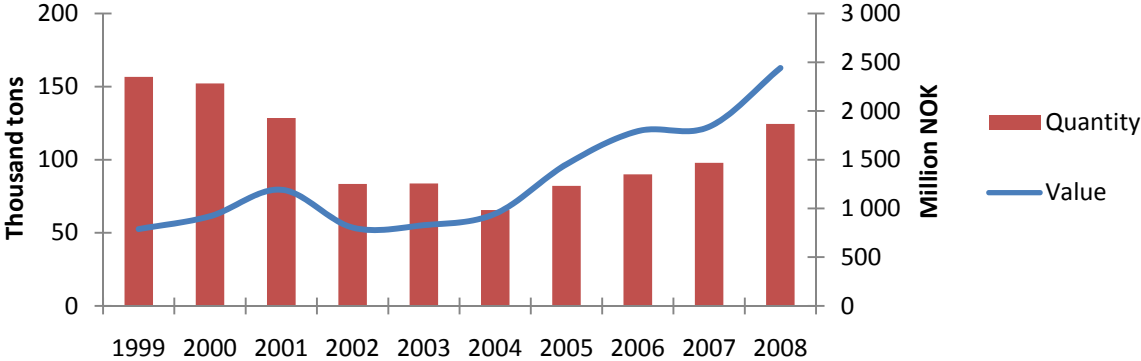


Figure 13 - Norwegian exports of fish to Poland
(Source: Statistics Norway, www.ssb.no)

³⁸ The average price is calculated with data from Figure 13, where Value/Quantity = Average Price.

9.2.1 The product composition of Norwegian fish exports to Poland

The product composition of Norwegian fish exports to Poland has changed dramatically over the last eight years. In 2001, the most important products were frozen herring filets and frozen mackerel. During the 1990’s, herring production grew steadily, and a free trade agreement with Poland through the EFTA was among the factors which made Poland the most important destination for Norwegian herring (Sissener et al. 2003). In 2008, however, frozen herring filets consisted of only 6 percent of total exports, down from 44 percent of total exports in 2001. Fresh cultured salmon had the opposite development, going from 11 percent of total exports in 2001 to 71 percent in 2008. Mackerel has declined from a 20 percent share to 2 percent of total exports over the same period. The share of processed fish has declined from 2 percent of total exports in 2001 to just 0.38 percent in 2008.

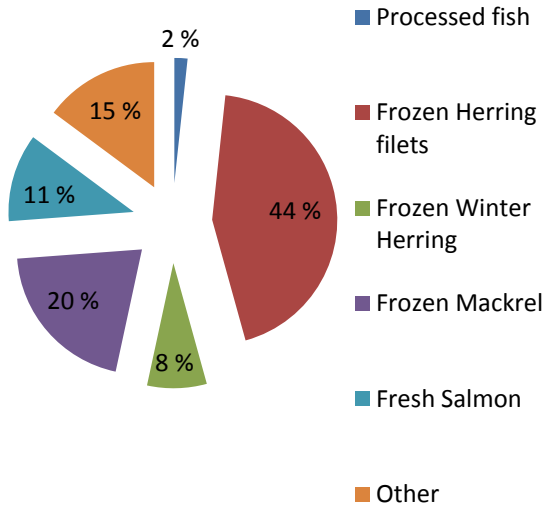


Figure 15 - Norwegian fish exports to Poland, 2001 Value (source: Statistics Norway, www.ssb.no)

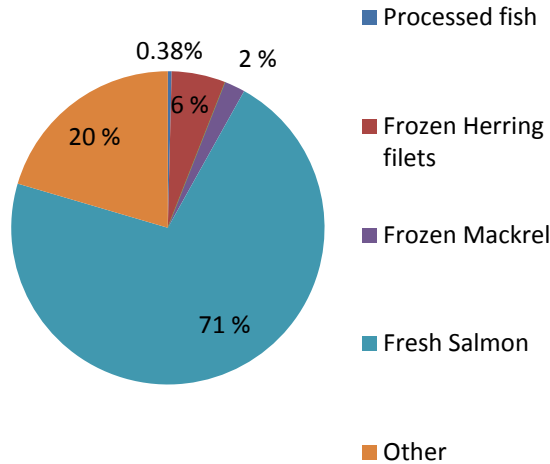


Figure 14 - Norwegian fish exports to Poland, 2008 Value (source: Statistics Norway, www.ssb.no)

Norwegian exports of fresh cultured salmon to Poland

Norwegian exports of fresh cultured salmon have increased every year since 1999. In 2008, Norway exported 67,600 tons of fresh cultured salmon to Poland for a value of 1.7 billion NOK. Poland is the second-largest market for Norwegian exports of salmon (www.seafood.no). This increase in Norwegian salmon exports is partly explained by increased wealth and consumption of luxury goods among the Polish, as well as increased salmon processing in Poland (see Norwegian exports of processed fish to Poland below). It is worth mentioning that Poland has nosed just ahead of Denmark as the most important processing country for Norwegian salmon (www.seafood.no).

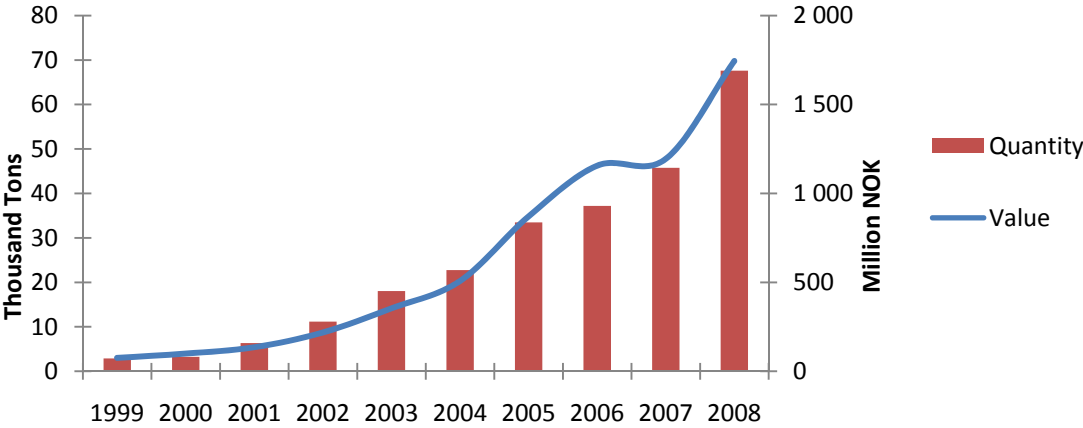


Figure 16 - Norwegian exports of fresh cultured salmon to Poland (Source: Statistics Norway, www.ssb.no)

Norwegian exports of frozen herring filets to Poland

In 2001, Norwegian exports of herring were valued at more than 500 million NOK and amounted to 50,000 tons in 2001. This export declined to 136 million NOK and 15,300 tons in 2008. When Poland joined the EU in 2004, Norway received compensation quotas (see 4.2.1, The European Free Trade Association (EFTA)) reflecting the export pattern from earlier years. These quotas were never fulfilled for two reasons. First, the exports which used to go through Poland instead started to go directly to the large herring markets in Russia and Ukraine.³⁹ The second factor is the increase in wealth in terms of GDP per capita in Poland, where consumption patterns have become more Western in that people want more expensive types of fish, like salmon.

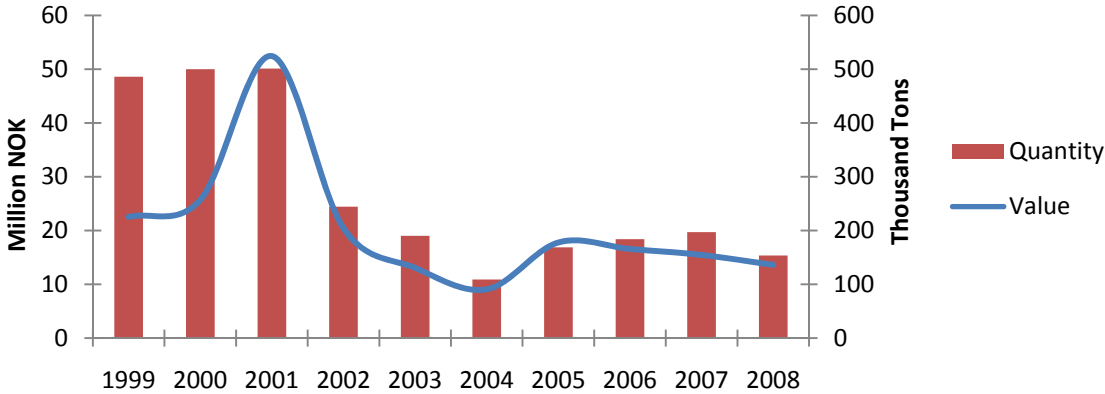


Figure 17 - Norwegian exports of frozen herring filets to Poland (Source: Statistics Norway, www.ssb.no)

³⁹ Interview with Kristin Alnes, 20.03.2009.

Norwegian exports of frozen mackerel to Poland

In 2001, Poland was the second-largest market for Norwegian exports of mackerel after Japan (www.ssb.no). In 2008, Poland has dropped to eighth place. Despite the small increase of exports in 2008, the trend is clear: mackerel is no longer an important fish product in the Polish market. The change can be explained by the same factors as for frozen herring filets.

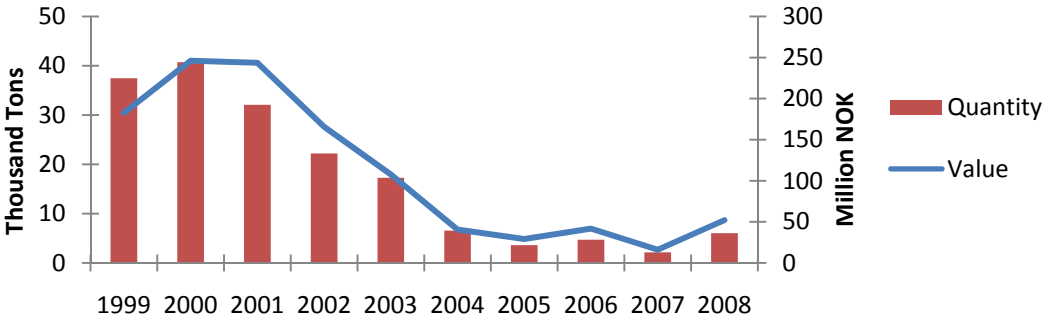


Figure 18 - Norwegian exports of frozen mackerel to Poland (Source: Statistics Norway, www.ssb.no)

Norwegian exports of processed fish products to Poland

Norwegian exports of processed fish products have never been large in Poland or the rest of the world. However, the steep downturn in the export of 2005 was a result of exporters exiting the market, while new exporters entered in 2006.⁴⁰ In 2008, the Norwegian export of processed products was not more than 9.3 million NOK, just a 0.38 percent share of the total export to Poland. The reason for this is that several processing factories have moved from Germany to Poland, and fish processing has become an important industry in Poland in recent years. Since joining the EU, Poland has become an important exporter of processed fish to the rest of the EU countries (www.aquamedia.org). Cheap labor costs in Poland are one of the reasons why the processing industry has moved to Poland. Marine Harvest ASA has one processing factory located in Gdansk, Poland (www.marineharvest.com). Apart from this, we do not know much about the ownership of the processing industry in Poland.

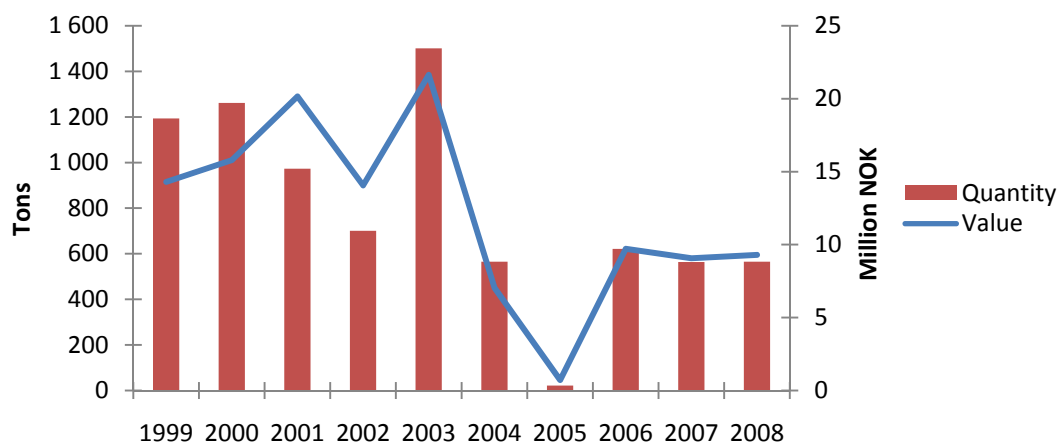


Figure 19 - Norwegian exports of processed fish products to Poland
(Source: Statistics Norway, www.ssb.no)

⁴⁰ Interview with Wenche Granli, 09.02.2009.

9.3 Summary of structural changes of Norwegian fish exports to Poland

Polish fish imports have increased greatly over the last ten years. After Poland entered the EU, the total market share for Norwegian exporters decreased. In this decade, Norwegian exports of fish to Poland have changed completely. In the period 1999-2008, Norwegian exports of fish and fish products to Poland have more than doubled in terms of value. However, the quantity exported has declined over this period.

Salmon has become the most important product exported to Poland since its accession to the EU, replacing herring at the top spot. The reasons for this include substitution for more expensive fish like salmon and a growing processing industry in Poland.

Herring and mackerel have become less important in the last decade. This can be explained by more expensive Polish patterns of consumption and the change in transport routes for these products on their way to Russia and Ukraine.

Poland became a strategic place to process fish after joining the EU, and processed products have therefore been less important for Norwegian exporters. Close access to markets inside the EU and cheap labor have resulted in several processing fish factories moving from Germany to Poland.

10. Conclusion

Our thesis has attempted to assess the effects of EU membership from multiple angles, looking at various factors. The empirical analysis of chapter 6 finds that fish products receiving tariff concession with the EEA agreement did not increase their EU share of total Norwegian fish exports. In our discussion in chapter 7 we argue that neither an elimination of tariff nor non-tariff barriers to trade will improve LSG's firm performance vastly. In sum, our analysis does not indicate clear benefits of a Norwegian EU membership for Lerøy Seafood Group ASA.

This conclusion is perhaps surprising. The Norwegian fish industry relies heavily on exports, and more than half of the industry's value is exported to the EU, a description which is also applies to LSG. How, then, can EU membership not constitute a clear benefit, since it guarantees free market access to the EU? There are at least three central answers to this question. First, the trade barriers Norwegian fish exporters face seems to be limited. Second, Norway is a dominant player in the EU salmon market. And third, because Norway is member of the EEA agreement, it takes part in the EU common market (apart from Fisheries and Agriculture), implying that fish exporters already benefit from free movements on inputs without EU membership.

Does this imply that it is not worthwhile for LSG to fight for EU membership? This is probably stretching things a bit too far. Posing the opposite question, whether EU membership will be a drawback for LSG, we find few negative aspects. When it comes to tariff and non-tariff barriers, the only negative aspect of EU membership is that the competition from cheaper agricultural products may harm sales in the home market of LSG.

Our thesis discusses EU membership from the perspective of an individual producer, based on the idea that the strategy and structure of companies determine the outcome of changes in trade agreements differently. Assuming that EU membership will provide a growth potential in the EU market, we interpret market dynamics in the fish industry as indicating that LSG is likely to be in a favorable position with Norwegian EU membership. A natural extension of this discussion would be to look at how EU membership can change the

economic geography and estimate the economic benefits with respect to agglomeration economies.

Our study has limitations with respect to methodology and access to data about LSG. To get a more precise idea of what EU membership will imply for LSG's profit margin another extension of the analysis is to look at the actual savings or costs membership will induce. It would be advantageous to carry out such an analysis from an internal perspective with access to firm-specific data to assess LSG's tariff expenses, transaction costs, and costs tied to the economic risk of remaining outside the EU.

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12. Appendix

12.1 Appendix 1

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PROTOCOL 9

ON TRADE IN FISH

AND OTHER MARINE PRODUCTS

Article 1

1. Without prejudice to the provisions referred to in Appendix 1, the EFTA States shall upon entry into force of the Agreement abolish customs duties on imports and charges having equivalent effect on the products listed in Table I of Appendix 2.
 1. Without prejudice to the provisions referred to in Appendix 1, the EFTA States shall apply no quantitative restrictions on imports or measures having equivalent effect on the products listed in Table I of Appendix 2. In this context the provisions of Article 13 of the Agreement shall apply.

Article 2

1. The Community shall, upon the entry into force of the Agreement, abolish customs duties on imports and charges having equivalent effect on the products listed in Table II of Appendix 2.
1. The Community shall reduce customs duties on the products listed in Table III of Appendix 2 progressively in accordance with the following timetable:
 - (a) on 1 January 1993 each duty shall be reduced to 86% of the basic duty;
 - (b) four further reductions of 14% each of the basic duty shall be made on 1 January 1994, 1 January 1995, 1 January 1996 and 1 January 1997.
1. The basic duties to which the successive reductions provided for in paragraph 2 are to be applied shall, for each product, be the duties bound by the Community under the General Agreement on Tariffs and Trade, or, where the duty is not bound, the autonomous duty on 1 January 1992. Should, after 1 January 1992, any tariff reductions resulting from the multilateral trade negotiations of the Uruguay Round become applicable, such reduced duties shall be used as the basic duties.

Whenever in the context of bilateral agreements between the Community and individual EFTA States reduced duties exist for certain products, those duties shall be considered as the basic duties for each of the EFTA States concerned.

1. The rates of duty calculated in accordance with paragraphs 2 and 3 shall be applied by rounding down to the first decimal place by deleting the second decimal.
1. The Community shall apply no quantitative restrictions on imports or measures having equivalent effect on the products listed in Appendix 2. In this context the provisions of Article 13 of the Agreement shall apply.

Article 3

The provisions of Articles 1 and 2 shall apply to products originating in the Contracting Parties. The rules of origin are set out in Protocol 4 of the Agreement.

Article 4

1. Aid granted through State resources to the fisheries sector which distorts competition shall be abolished.

18.3.2009 - EEA AGREEMENT - PROTOCOL 9 – p. 2

1. Legislation relating to the market organisation in the fisheries sector shall be adjusted so as not to distort competition.

1. The Contracting Parties shall endeavour to ensure conditions of competition which will enable the other Contracting Parties to refrain from the application of anti-dumping measures and countervailing duties.

Article 5

The Contracting Parties shall take the necessary measures to ensure that all fishing vessels flying the flag of other Contracting Parties enjoy access equal to that of their own vessels to ports and first-stage marketing installations together with all associated equipment and technical installations.

Notwithstanding the provisions of the preceding paragraph, a Contracting Party may refuse landings of fish from a fish stock of common interest over the management of which there is serious disagreement.

Article 6

Should the necessary legislative adaptations not have been effected to the satisfaction of the Contracting Parties at the time of entry into force of the Agreement, any points at issue may be put to the EEA Joint Committee. In the event of failure to reach agreement, the provisions of Article 114 of the Agreement shall apply mutatis mutandis.

Article 7

The provisions of the agreements listed in Appendix 3 shall prevail over provisions of this Protocol to the extent they grant to the EFTA States concerned more favourable trade regimes than this Protocol.

18.3.2009 - EEA AGREEMENT - PROTOCOL 9 – p. 3 *APPENDIX I*

Article 1

On the following products Finland may temporarily maintain its present regime. Not later than 31 December 1992 Finland shall present a fixed timetable for the elimination of these exemptions. HS Heading No.	Description of goods
ex 0302	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading No 0304: Salmon Baltic herring
ex 0303	Fish, frozen, excluding fish fillets and other fish meat of heading No 0304: Salmon Baltic herring
ex 0304	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen Fresh or chilled fillets of salmon Fresh or chilled fillets of Baltic herring (The term "fillet" shall also cover fillets where the two sides are joined together, for example, by the back or the belly.)
18.3.2009 - EEA AGREEMENT - PROTOCOL 9 – p. 4 HS Heading No.	Description of goods
ex Chapter 15	Fats and oils for human consumption
ex Chapter 23	Feedingstuffs for production animals

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APPENDIX 2

TABLE IHS Heading No.	Description of goods
0208 ex 0208 90 Chapter 3 1504 1516 ex 1516 10 1603 ex 1603 00 1604 1605 2301 ex 2301 10 ex 2301 20 2309 ex 2309 90	Other meat and edible meat offal, fresh chilled or frozen: - Other: - - of whale Fish and crustaceans, molluscs and other aquatic invertebrates Fats and oils and their fractions, of fish or marine mammals, whether or not refined, but not chemically modified Animal or vegetable fats and oils and their fractions, partly or wholly hydrogenated, interesterified, re-esterified or elaidinized, whether or not refined, but not further prepared: Animal fats and oils and their fractions: obtained entirely from fish or marine mammals Extracts and juices of meat, fish or crustaceans, molluscs or other aquatic invertebrates: Extracts and juices of whale meat, fish or crustaceans, molluscs or other aquatic invertebrates Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved Flours, meals and pellets, of meat or meat offal, of fish or of crustaceans, molluscs or other aquatic invertebrates, unfit for human consumption; greaves: Flours, meals and pellets, of meat or meat offal; greaves: Whale meal - Flours, meals and pellets of fish or of crustaceans, molluscs or other aquatic invertebrates Preparations of a kind used in animal feeding: - Other - - Fish solubles

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TABLE II CN Heading No.	Description of goods
0302 50	Cod (<i>Gadus morhua</i> , <i>Gadus ogac</i> , <i>Gadus macrocephalus</i>) and
0302 69 35	fish of the species <i>Boreogadus saida</i> , fresh, chilled or frozen,
0303 60	including fillets, fresh or chilled
0303 79 41	
0304 10 31	
0302 62 00	Haddock (<i>Melanogrammus aeglefinus</i>), fresh, chilled or frozen,
0303 72 00	including fillets, fresh or chilled
ex 0304 10 39	
0302 63 00	Saithe [Coalfish] (<i>Pollachius virens</i>), fresh, chilled or frozen,
0303 73 00	including fillets, fresh or chilled
ex 0304 10 39	
0302 21 10	Lesser or Greenland halibut (<i>Reinhardtius hippoglossoides</i>) and
0302 21 30	Atlantic halibut (<i>Hippoglossus hippoglossus</i>), fresh, chilled or
0303 31 10	frozen, including fillets, fresh or chilled
0303 31 30	
ex 0304 10 39	
0305 62 00	Cod (<i>Gadus morhua</i> , <i>Gadus ogac</i> , <i>Gadus macrocephalus</i>) and
0305 69 10	fish of the species <i>Boreogadus saida</i> , salted but not dried or
	smoked and these fish in brine
0305 51 10	Cod (<i>Gadus morhua</i> , <i>Gadus ogac</i> , <i>Gadus macrocephalus</i>) and
0305 59 11	fish of the species <i>Boreogadus saida</i> , dried, unsalted
0305 30 11	Fillets of cod (<i>Gadus morhua</i> , <i>Gadus ogac</i> , <i>Gadus</i>
0305 30 19	<i>macrocephalus</i>) and of the species <i>Boreogadus saida</i> , dried,
	salted or in brine, but not smoked
0305 30 90	Other fillets, dried, salted or in brine, but not smoked
1604 19 91	Other fillets, raw, merely coated with batter or breadcrumbs,
	whether or not prefried in oil, deep frozen
1604 30 90	Caviar substitutes

18.3.2009 - EEA AGREEMENT - PROTOCOL 9 – p. 7 TABLE III

In each of the following Headings, the concessions granted by the Community shall not include any products specified in Table II or in the Attachment to Table III. CN Heading No.	Description of goods
0301	Live fish
0302	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading No 0304
0303	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading No 0304
0304	Fish, frozen, excluding fish fillets and other fish meat of heading No 0304
0305	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen
0306	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen
0307	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process; flours, meals and pellets of fish, fit for human consumption
1604	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets
1605	

	<p>of crustaceans, fit for human consumption</p> <p>Molluscs, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; aquatic invertebrates other than crustaceans and molluscs, live, fresh, chilled, frozen, dried, salted or in brine; flours, meals and pellets of aquatic invertebrates other than crustaceans, fit for human consumption</p> <p>Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs</p> <p>Crustaceans and molluscs, and other aquatic invertebrates, prepared or preserved</p>
18.3.2009 - EEA AGREEMENT - PROTOCOL 9 - p. 8 ATTACHMENT OT TABLE III CN Heading No.	Description of goods
(a) Salmon: Pacific salmon (<i>Oncorhynchus</i> spp.), Atlantic salmon (<i>Salmo salar</i>) and Danube salmon (<i>Hucho hucho</i>).	
0301 99 11 0302 12 00 0303 10 00 0303 22 00 0304 10 13 0304 20 13 ex 0304 90 97 0305 30 30 0305 41 00 0305 69 50 1604 11 00 1604 20 10	<p>live</p> <p>fresh or chilled</p> <p>frozen Pacific</p> <p>frozen Atlantic and Danube</p> <p>fresh or chilled fillets</p> <p>frozen fillets</p> <p>other frozen meat of salmon</p> <p>fillets, salted or in brine, not smoked</p> <p>smoked, including fillets</p> <p>salted or in brine, but not dried or smoked</p> <p>whole or in pieces, prepared or preserved</p> <p>other prepared or preserved</p>
(b) Herring (<i>Clupea harengus</i> , <i>Clupea pallasii</i>)	
0302 40 90 ex 0302 70 00 0303 50 90 ex 0303 80 00 ex 0304 10 39 0304 10 93 ex 0304 10 98 0304 20 75 0304 90 25 ex 0305 20 00 0305 42 00 0305 59 30 0305 61 00 1604 12 10 1604 12 90 ex 1604 20 90	<p>fresh or chilled, from 16.6 to 14.2</p> <p>livers and roes, fresh or chilled</p> <p>frozen, from 16.6 to 14.2</p> <p>livers and roes, frozen</p> <p>fresh fillets of herring</p> <p>fresh flaps, from 16.6 to 14.2</p> <p>other fresh meat of herring</p> <p>frozen fillets other frozen meat of herring, from 16.6 to 14.2</p> <p>livers and roes of herring, dried, smoked, salted or in brine</p> <p>smoked, including fillets</p> <p>dried, whether or not salted, but not smoked</p> <p>salted or in brine, but not dried or smoked</p> <p>fillets, raw, merely coated in batter or breadcrumbs, whether or not prefried in oil, deep frozen</p> <p>prepared or preserved herring, whole or in pieces, but not minced</p> <p>other prepared or preserved herring</p>
(c) Mackerel (<i>Scomber scombrus</i> , <i>Scomber australasicus</i> , <i>Scomber japonicus</i>)	

0302 64 90 0303 74 19 0303 74 90 ex 0304 10 39 0304 20 51 ex 0304 20 53 ex 0304 90 97 0305 49 30 1604 15 10 1604 15 90 ex 1604 20 90	fresh or chilled, from 16.6 to 14.2 frozen, from 16.6 to 14.2 (<i>Scomber scombrus</i> , <i>Scomber japonicus</i>) frozen, from 16.6 to 14.2 (<i>Scomber australasicus</i>) fresh fillets of mackerel frozen fillets (<i>Scomber australasicus</i>) frozen fillets (<i>Scomber scombrus</i> , <i>Scomber japonicus</i>) other frozen meat of mackerel smoked including fillets whole or in pieces, prepared or preserved (<i>Scomber scombrus</i> , <i>Scomber japonicus</i>) whole or in pieces, prepared or preserved (<i>Scomber australasothericus</i>) other prepared or preserved mackerel
18.3.2009 - EEA AGREEMENT - PROTOCOL 9 – p. 9 (d) Shrimps and prawns	
0306 13 10 0306 13 30 0306 13 90 0306 23 10 0306 23 31 0306 23 39 0306 23 90 1605 20 00	Of the family Pandalidae, frozen Of the genus <i>Crangon</i> , frozen Other shrimps and prawns, frozen Of the family Pandalidae, not frozen Of the genus <i>Crangon</i> , fresh, chilled or cooked by steaming or by boiling in water Other shrimps of the genus <i>Crangon</i> Other shrimps and prawns, not frozen prepared or preserved
(e) Coquilles St Jacques (<i>Pecten maximus</i>)	
ex 0307 21 00 0307 29 10 ex 1605 90 10	live, fresh or chilled frozen prepared or preserved
(f) Norway lobsters (<i>Nephrops norvegicus</i>)	
0306 19 30 0306 29 30 ex 1605 40 00	frozen not frozen prepared or preserved

18.3.2009 - EEA AGREEMENT - PROTOCOL 9 – p. 10 {4} Words “Agreement between the European Economic Community and the Swiss Confederation, signed on 22 July 1972, and a subsequent Exchange of Letters concerning agriculture and fisheries, signed on 14 July 1986;” deleted by the Adjusting Protocol.

APPENDIX 3

Agreements between the Community and individual EFTA States, as referred to in Article 7:

Agreement between the European Economic Community and the Kingdom of Sweden, signed on 22 July 1972, and a subsequent Exchange of Letters concerning agriculture and fisheries, signed 14 July 1986;

{4}

Agreement between the European Economic Community and the Kingdom of Norway, signed on 14 May 1973, and a subsequent Exchange of Letters concerning agriculture and fisheries, signed 14 July 1986;

Article 1 of Protocol No 6 of the Agreement, between the European Economic Community and the Republic of Iceland signed on 22 July 1972.

12.2 Appendix 2

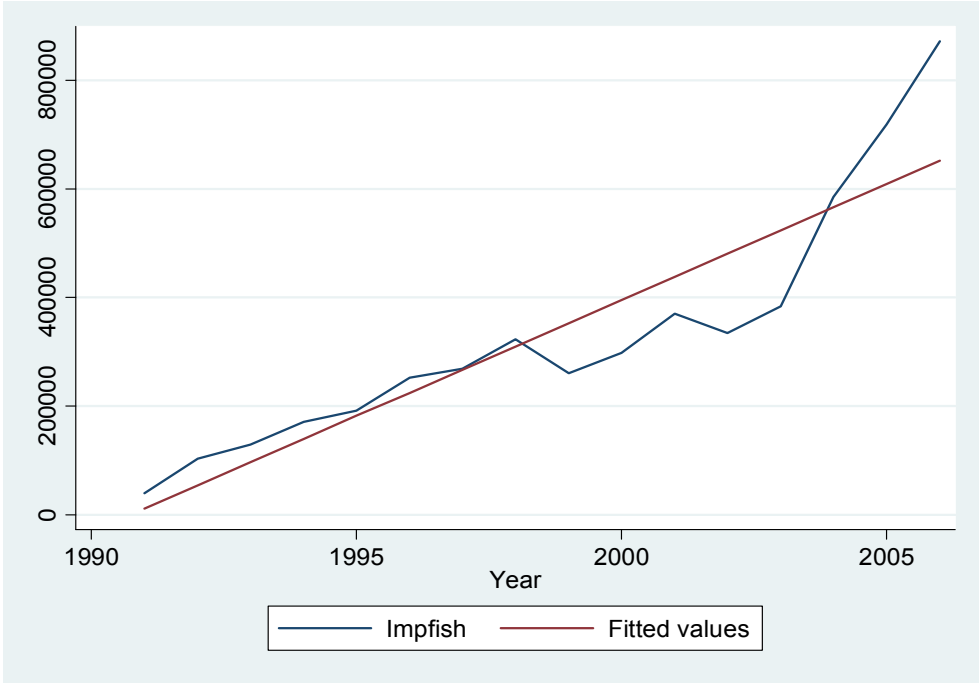


Figure 20 - Poland's total import of fish with estimated trend
(Source: Food and Agricultural Organization of the United Nations, www.fao.org)

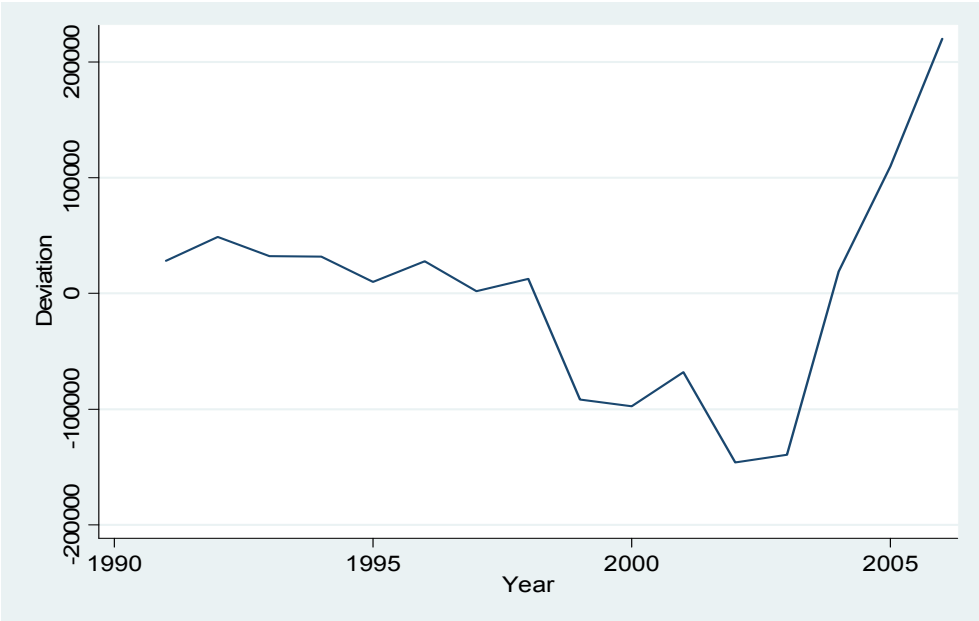


Figure 21 - Estimated deviation from trend for Polish fish imports

	(1)	(2)
Year (trend)	26292.66*** (2363.005)	39319.97*** (2866.606)
2006	394575.2*** (39328.24)	232498.9*** (38101.79)
2005	268073.9*** (38102.31)	119024.8*** (35419.31)
2004	160599.6*** (36986.87)	24577.8 (32768.04)
2003		-137058.2** (30156.19)
2002		-146925.3*** (2759.96)
2001		-72504.29** (25099.86)
2000		-105388.3** (22692.71)
1999		-103046.3*** (20404.65)
1998		-1719.371 (18280.47)
1997		-16156.4 (16384.02)
Constant	-52300000 (4718929)	- 78200000 (5714581)
R ²	0.9851	0.9992
Adjusted R ²	0.9797	0.9971
Observations	16	16
Note: Standard deviation in brackets	* p < .10	** p < .05
		*** p < .01

Table 5 – Multiple regressions to test if the years 2004-2006 gives additional explanation to Polish fish import

We are making two models:

$$1) \text{ Polish fish imports} = \beta_0 + \beta_1 \text{year (trend)} + \beta_2 2004 + \beta_3 2005 + \beta_4 2006$$

$$2) \text{ Polish fish imports} = \beta_0 + \beta_1 \text{year (trend)} + \beta_2 1997 + \beta_3 1998 + \beta_4 1999 + \beta_5 2000 + \beta_6 2001 + \beta_7 2002 + \beta_8 2003 + \beta_9 2004 + \beta_{10} 2005 + \beta_{11} 2006$$

Testing if model (1) is jointly significant:⁴¹

$$H_0: \beta_2 = 0, \beta_3 = 0, \beta_4 = 0$$

Against

$$H_1: H_0 \text{ is not true}$$

We find that $F(3,11) = 39.11 > C^{42}(3,11) = 6.22$

H_0 is rejected and the years 2004, 2005 and 2006 are jointly significant to the model at the 1 % significance level. In addition 2004, 2005 and 2006 has significant positive effect on Polish fish imports in model (1).

Then we are testing if model (2) is jointly significant:

$$H_0: \beta_2 = 0, \beta_3 = 0, \beta_4 = 0, \beta_5 = 0, \beta_6 = 0, \beta_7 = 0, \beta_8 = 0, \beta_9 = 0, \beta_{10} = 0, \beta_{11} = 0$$

Against

$$H_1: H_0 \text{ is not true}$$

We find that $F(10, 4) = 90.29 > C^{43}(10,4) = 5.99$

H_0 is rejected and the years 2004, 2005 and 2006 are jointly significant to the model at the 1 % significance level. In addition 2005 and 2006 has significant positive effect on Polish fish imports, and 1999, 2000, 2001, 2002 and 2003 have significant negative effect on Polish fish

⁴¹ For more information about the f – test see: (Wooldridge 2006:150)

⁴² C = critical value at 1 % significance level

⁴³ C = critical value at 1 % significance level

imports in model (2).⁴⁴ In sum this indicates that Poland has had a structural shift in fish imports after they joined the EU. However we have too few observations after 2004 to draw a conclusion.

⁴⁴ Including more dummies do not increase the explanation factor (r^2) of the model