

**Export or Die.
The Icelandic Fishing Industry:
The Nature and Behaviour of its Export Sector.**

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DEDICATION

To my father, Bjarni Bjarnason, who died in July 1993.

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ABSTRACT

The main contribution of this thesis to knowledge, is its analysis of the nature and behaviour of the export sector of the Icelandic fishing industry. The thesis identifies the current structure of the export sector and focuses on the main characteristics of export behaviour of the exporting firms.

The thesis starts by providing an insight into the fundamental role of exporting for economic performance in Iceland, and the distinctive role of the fishing industry in generating export income. This is followed by a descriptive analysis of the historical development of the three defined sectors of the fishing industry, i.e. the fishery, processing, and export sectors.

A review of the literature on export behaviour of firms, is undertaken in the second part of the thesis, to provide a theoretical background to the empirical investigation, introduced in the third part.

The third part contains a qualitative presentation of the primary information collected in the research, together with results from a questionnaire survey, which followed up some of the findings recorded in the qualitative analysis. This section identifies the main types of firm in the export sector, and analysis is made of the export behaviour of different groups of firms in the sector. Consideration is given to factors which encouraged the entry of new firms into exporting, especially during the 1980s, the firms' process of internationalisation, and factors identified by exporters as obstacles in exporting. The study, also considers the firms' different objectives in exporting, and the main characteristics of their export marketing strategies and management.

The thesis concludes, that the export behaviour of the firms exporting Icelandic marine products, is importantly based on, and characterised by their various organisational features, the nature of the products they are exporting, geographical location, and economic and industry conditions in Iceland. Finally, pointers are provided to further research.

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Glossary

Alþingi	The Icelandic Parliament
Einkaneysla 1957-1987	Private Consumption 1957-1987
Fiskifélag Íslands	The Fisheries Association of Iceland
Fjárfesting 1945-1989	Investment 1945-1989
Fjármálatíðindi	Financial Bulletin
Hagstofa Íslands	The Statistical Bureau of Iceland
Hagtíðindi	Monthly Statistics
Háskóli Íslands	University of Iceland
Íslenskar sjávarafurðir hf.	Iceland Seafood Ltd
Rannsóknaráð ríkisins	The Icelandic Science Committee
Rannsóknarstofnun fiskiðnaðarins	The Icelandic Fisheries Laboratories
Samband íslenskra samvinnufélaga	Federation of Icelandic Co-operatives
Samband íslenskra sveitarfélaga	National Association of Local Authorities in Iceland
Síldarútvegsnefnd	Iceland Herring Board
Sjávarútvegsstofnun Háskóla Íslands	The Fisheries Research Institute, University of Iceland
Sjávarútvegur	Fishing Industry
Stjórnartíðindi	Government Gazette
Sögulegt yfirlit hagtalna	Historical Statistics
Sölumiðstöð hraðfrystihúsanna	Icelandic Freezing Plants
Sölusamband íslenskra fiskframleiðanda	The Sales Union of Icelandic Fish Producers

Sölustofnun lagmetis	Icelandic Waters
Tölfræðihandbókin 1984	Statistical Abstract of Iceland 1984
Útflutningsráð Íslands	The Icelandic Export Council
Verðlagsráð sjávarútvegsins	Fish Industry Price Determination Board
Verslunarskýrslur	External Trade Statistics
Vísindaráð	Iceland Council of Science
Þjóðarbúskapurinn	The Icelandic Economy and Developments
Þjóðhagsstofnun	National Economic Institute

Abbreviations

EEC	European Economic Community
EEA	European Economic Area
EFTA	European Free Trade Association
FAO	Food and Agricultural Organization
ISK	Icelandic krónur
ITQ	Individual Transferable Quotas
OECD	Organisation for Economic Co-operation and Development
TAC	Total Allowable Catch

Icelandic letters

Þ/þ	th as in "thorp"
Ð/ð	th as in "bathe"
Æ/æ	always has the sound of i in "mile"
Ö/ö	always has the sound of u in "burn"

1. Introduction

It is not an over-statement to argue that the well known phrase within the export literature, "export or die," better applies to the Icelandic fishing industry than to any other industry in Iceland, and even industries in other countries as well. The Icelandic economy is an export driven economy, where about half of the growth in the GDP since the World War II can be attributed to the fishing industry.¹ Economic performance in Iceland is largely based on the performance of the fishing industry, its exports volume and foreign market prices. Despite Iceland's position as a developed market economy, its exporting activity has some characteristics of many developing countries. More than 90 per cent of the country's total merchandise export value comprises primary commodities, mainly marine products which represent just over 75 per cent of the merchandise exports, and around 55 per cent in terms of total exports of goods and services.

Consumption of fish and fish products in Iceland is one of the highest per capita consumption in the world. However, only between one and two per cent of the total fish catch is consumed domestically and the rest is exported. The world export market for fish products has in the last two decades grown rapidly. It is estimated that the world exports of fresh and simply preserved fish, in the period from 1970-1986, grew on average around 14.6 per cent per annum.² Iceland is among the 10 principal exporting nations of fishery commodities in the world in terms of value, with a share of around 3.5 per cent.³ The country's share of the total world catch in inland and marine fishing areas was, however, only about 1.8 per cent in 1988.⁴ The real-export value of marine products from Iceland grew on the average around 11 per cent per year, during the period between 1972 and 1991, with all the main product categories showing substantial growth.

During the last two decades, important changes have emerged within all sectors of the Icelandic fishing industry, as a result of a number of domestic and foreign

government decisions, biological changes in the marine ecosystem and a variety of commercial decisions, taken by firms in the fishing industry. In the export sector of the fishing industry, the most apparent changes have been: first, a significant increase in the number of firms exporting marine products from Iceland; second, a large decrease, in the share of total export value of marine products from Iceland, held by the principal export organisations; third, an increase in the exporting of new marine products, as a result of harvesting of new species, and changes in the processing methods of some traditional species like, cod, haddock and redfish; fourth, the entry into, and exploiting of, new export markets for Icelandic marine products such as in Asia, and some changes in the importance of existing markets, such as the U.S. market and the markets in East and West Europe.

Despite the export sector's fundamental role in the Icelandic fishing industry, it has attracted little attention among academics. Conversely, most of their work has been concentrated in the area of fisheries. The lack of research on the export sector, is even more surprising, given the recent changes within the sector. Within the area of export behaviour of firms, a review of the literature shows that most of the research has been conducted in western industrialized countries and restricted to relatively few industries, usually industries exporting manufactured or semi-manufactured goods. The number of studies focusing on the export behaviour of firms in developing countries, or firms exporting various primary commodities, such as marine or agricultural goods, is small. In addition, studies dealing with firms and industries where export is the prerequisite for existence and survival due to a small home market are similarly very limited. In the last few years, encouragement has been given by some academics, to increasing research in this area. Katsikeas and Papalexandris⁵ suggested, that more research should be directed to the study of the export marketing behaviour of firms from developing countries, with a special emphasis on factors such as export motivation, exporter objectives, problems

associated with exporting and differential exporter advantages. In respect of the above facts, the author's decision to undertake this research study into the export sector of the Icelandic fishing industry could be summarised as follows:

First, the fundamental and continuing importance of fisheries and marine products exporting for the Icelandic economy.

Second, the fact that exporting of primary commodities is at a higher ratio of total exports in Iceland, than in any other developed market economy. Iceland is in this respect in a group with many developing and least developed countries.

Third, the apparent changes in the structure of the export sector emerging during the 1980s, e.g. the decreasing share of the principal export organisations in the total export value of marine products, and some major changes in the geographical distribution of marine products exported from Iceland.

Fourth, despite the vital importance of exporting for the Icelandic fishing industry, no major research has been undertaken on the export sector, focusing upon such things as its structure and the various micro-factors which are affecting the sector's behaviour at the firm level.

Fifth, the seeming absence of published research on export behaviour of firms in developing countries, and of firms exporting primary commodities, especially those firms and industries where export is the prerequisite for existence and survival due to a small home market.

1.1. Research Objectives

Deriving from the above, the principal aim of this thesis is to examine the current nature of the export sector of the Icelandic fishing industry, and to explore the various factors which characterise the behaviour of firms exporting marine products from Iceland.

The study, which bases an important part of its approach on issues within the existing literature on export behaviour of firms, is designed to provide a picture of the factors, forces and conditions which are mainly shaping the export behaviour of firms exporting Icelandic marine products. It endeavours to answer questions like: 1) What influenced some of the structural changes in the export sector and what is the current structure of the export sector? 2) What are the main characteristics of firms in the sector? 3) What initiated the involvement of firms in exporting? 4) What are the main problems faced by firms in their exporting activity? 5) What are the main objectives and emphases of firms exporting marine products from Iceland? 6) What are the main characteristics of the firms' export management and marketing strategies? and 7) What are the exporters' perception of their export performance and the main strengths and weaknesses their firms have in exporting?

The research is felt to be beneficial for the Icelandic fishing industry, particularly if it is believed that the export value of marine products from Iceland should be increased by directing it from the heavy dependence on exporting of unprocessed or semi-processed products (primary commodities) into exporting of more value-added products, either with the help of conscious government policies or by the exporters themselves.

The thesis contributes to knowledge by its analysis of the nature and behaviour of the export sector of the Icelandic fishing industry. Furthermore, it contributes to the literature and a general theory on export behaviour of firms, by pointing out some factors which are characteristic for relatively small firms exporting primary commodities and which live under the circumstances of "export or die".

1.2. Research Methodology

This research is based on both the collection of primary information and the analysis of various secondary data. The exploratory nature of this research, and the somewhat heterogeneous population of firms in the export sector of the Icelandic fishing industry, lead to the use of semi-structured interviews with exporting firms as the main instrument in collecting the primary data. At a later stage some of the findings recorded in these interviews were followed up by a questionnaire. The selection of firms was primarily made from the Directory of Icelandic Exporters, published by the Export Council of Iceland in January 1992. The publication contains a list of exporters in Iceland broken down by the commodities they export. All of the 62 firms classified in the Directory as exporters of marine products were selected for the study. Information obtained from the Icelandic Fresh Fish Allocation Board listing the principal exporters of fresh fish on ice led to the inclusion of 8 additional firms to the sample, making a total of 70 firms which were approached through an introductory letter. (Appendix 1.1.) The introductory letters, which were posted on the 20th of February 1992, were in all cases addressed to the managing director of the respective firms. The letter which described on one sheet the main purpose of the research and the sampling method, requested interviews with the managing director or other person principally responsible for export marketing in the firm. Full confidentiality was promised for all information which related to individual firms whether given by the respondents in a verbal or written form. In the last week of March 1992, all those who were approached by the initial letter were contacted by phone in order to schedule interviews with them. Information collected in these phonecalls or through other sources led to a reduction in the number of firms scheduled for an interview down to 58 firms. This reduction in the sample size was for the following reasons: first, due to pairing and merging amongst 4 of the firms included in the initial sample their number was reduced to only 2 firms; second, two

of the firms contacted claimed they were not exporting any marine products and were therefore invalid for selection; third, 8 firms in total of those included in the Directory of Icelandic Exporters had in fact stopped exporting and ceased operation. All the 58 managing directors contacted by phone indicated a willingness to participate and interviews took place in the period from 6th of May to 30th of July 1992. During the interviewing period two additional firms which for some reason had not been included in the Directory of Icelandic Exporters but, which according to official statistics were amongst the 50 largest exporting firms in Iceland in 1991, were added to the sample. This left the final number of exporting companies interviewed at 60 firms. (Appendix 1.2.)

Personal interviews were carried out in 57 firms but, for some time and money saving reasons, telephone interviews were conducted with 3 firms located in rural regions. In all cases, the interviewee was the managing director of the company and in two firms the export sales director participated in the discussions. A typical interview lasted around one and a half hour but, in 5 firms the interviews lasted up to three hours. The interview schedule was previewed by two academicians in the Departments of Business Studies in the University of Edinburgh, two managing directors of two leading Icelandic marine products exporting companies and an individual who has experience of several years in the fishing industry. Two pretest interviews were carried out in Iceland during the last week of March 1992 with two of the smaller exporters included in the initial sample. One of these firms was re-interviewed in the summer of 1992 but the other went out of the business and was not included in the final sample.

The interview covered a variety of topics including personal information about the interviewees, background company characteristics, past history of international involvement, current exporting activity, export marketing strategy and use of marketing variables, obstacles or problems associated with exporting, export

objectives, export organisation, relationship with foreign counterparts, export financing and firms' strengths and weaknesses in the exporting. With the consent of the respondents all the interviews were tape-recorded and then transcribed in Icelandic for later analysis.

Concurrent to the interviews a variety of factual information was collected from the firms such as information about their total sale, main products exported and percentage distribution of export by markets. (Appendix 1.3.) In some firms this information was not available for all the years required and in some cases, especially in the smaller firms, the respondents admitted their export figures and percentage breakdown figures for products and markets were only an estimate. In the case of some of the larger firms included in the research, the author collected the information through various printed material supplied by the companies such as their annual reports.

As timing of the interviews is concerned two things are worth mentioning as having a possible influence on the views expressed by the interviewees. 1) In the mid interview period the Ministry of Fishery and the Icelandic Marine Research Institute (Hafrannsóknastofnun) released information regarding some very poor stock condition of many demersal species in Icelandic waters and which pointed to some big cuts in the total allowable catch (TAC) for many demersal species in the forthcoming fishing year (01.09.92-31.08.93). 2) In the year 1991 and the early part of 1992 there was a big fall in the catch of capelin. Consequently, the export value of many firms specialising in the production and/or exporting of fish meal and fish oil was exceptionally low in 1991.

As stated above a questionnaire containing 4 questions was sent to the 60 firms previously interviewed in the summer of 1992. (Appendix 1.4.) The questions were based on several factors indicated by the interviewees except that the first question included factors drawn in the prevailing export literature. All the questions were first

drafted in English and then translated by the author into Icelandic before being sent out. Academicians in the Departments of Business Studies in the University of Edinburgh and the University of Iceland as well as two individuals in the export sector of the fishing industry were asked to view the respective versions of the questions. The questionnaires and a cover letter with self-addressed, stamped envelope was sent out in the last week of April 1993. At the time when a follow-up letter was sent out and three weeks after the posting of the initial letter, 31 questionnaires had been returned. Two weeks after the follow-up letter, the author phoned all those managers who had not returned their questionnaires. After two reminders 48 responses had been returned. At this time it had come to the author's knowledge that two of the 60 firms which were sent the questionnaires had in fact ceased operation in the time which elapsed since their managers were interviewed in the summer of 1992 when the questionnaires were posted. This reduced the number of possible responses to 58 questionnaires. Fifty days after the initial letter was posted, the final remainder, a telefax, was sent out to the 10 managers who had not returned their questionnaires. In the next two following weeks, 8 more questionnaires were returned, leaving the final number of responses at 56 or a response rate of 93.3 per cent (56/60) but 96.6% per cent if measured in terms of possible responses to be returned (56/58).

The first question included a list of 30 potential obstacles or problems associated with exporting, which were either indicated by the interviewees or drafted in accordance with the prevailing themes in the export literature. A five point Likert scale extending from "Not at all problematic" to "Extremely problematic" was the response vehicle for each of the 30 measures. Managers were asked to indicate the importance of each factor for their firms exporting activity.

The second question included 9 possible objectives in exporting as indicated by managers in previous interviews. Managers were asked to select three factors and

rank them in order of importance, with the factor selected and labelled as number 1 being the most important objective, and so on.

The third question was drafted on the basis of factors indicated by the interviewees. The questions included 11 factors of potential strengths possessed by the exporting firms. Managers were asked to select four factors and rank them in order of importance by labelling them with numbers from 1 to 4, with the factor receiving the mark 1 as the most important strength, the factor receiving the mark 2 as the second most important strength and so on.

The fourth and final question was, like the second and third questions, designed on the basis of factors recorded in the interviews with managers. The question contained 10 factors of possible company weaknesses which managers might identify in their exporting activity. Managers were asked to select four factors and rank them in order of importance with the factor perceived as the most important weakness receiving the mark 1, the second most important weakness the mark 2, and so on.

In the second, third and fourth questions, options were given to the respondents to introduce additional factors which they felt were missed from the list provided and which were related specifically to their firm.

For the analysis some basic statistical calculations of: mean, median and standard deviation were used in addition to frequency and cross tabulation. The statistical package SPSS, version 6.0, was utilised for the analysis.

The secondary data used in this research consist both of Icelandic and foreign literature on the fishing industry and of foreign literature on the export behaviour of firms. Other information sources such as: various reports issued by the companies included in the research and within government ministries were of important use in this study. Various statistical information were computed from data published mainly by the Statistical Bureau of Iceland and the Fisheries Association of Iceland.

1.3. Structure of the Thesis

This thesis is divided into 9 chapters. Chapter 2 provides an insight into some of the geological and economic characteristics of Iceland, and the country's economic development in recent years. It further describes the fundamental role of exporting for the country's economic performance, which is largely furnished by the distinctive role of the fishing industry in generating export income. Chapter 3 is based on secondary data and gives a descriptive analysis of the three main sectors of the Icelandic fishing industry. The chapter examines some of the main factors of the industry's business environment, historical development of each of the three sectors of the fishing industry and describes some of the sectors' current characteristics. The literature on export behaviour of firms' is reviewed in Chapter 4. The main themes outlined are: initiation of exporting, firms' internationalisation process, problems associated with exporting, exporters and importers relationship, management influences on firms' export behaviour, and factors affecting firms' export performance. Chapter 5 outlines the main types of firm included in this research and outlines the current structure of the export sector. Two main type of firms are identified in the sector: Export Management Companies (EMCs) and Partially Integrated Exporters (PIE). The chapter also examines various firm characteristics, such as size, form of ownership, age, export experience and regional distribution. Chapter 6 covers some of the behavioural factors which characterise the firms' researched, in their exporting activity. The chapter considers factors which initiated their initial involvement in exporting, the firms' process of internationalisation, and factors identified as problems associated with exporting by managers in the exporting firms. Chapter 7 analyses the main objectives and emphasis in exporting by the firms' in the sector and explains differences in the firms' export strategies and marketing management behaviour. Finally, the chapter reveals the managers' view and evaluation on their firms export performance and the main strengths and

weaknesses of their firms in exporting. Chapter 8 provides the main results from a questionnaire survey which was carried out with the aim to follow-up some of the qualitative findings, generated earlier in the research. The themes covered in the chapter relate to firms' export objectives, problems associated with exporting, and managers evaluation of strengths and weaknesses in exporting. Chapter 9 concludes the thesis, summarises the main findings of the study and views them in relation to previous studies on firms' export behaviour. The implications of the research findings, both for firms in the export sector and for government policy are considered and, finally, suggestions are made for further research.

References Cited

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- ⁵ Katsikeas, Constantine S. Papalexandris, Nancy. "An Empirical Exploration of Motivation Forces Underlying the Export Decision of Greek Food Manufacturers." Marketing for Europe - Marketing for the Future. 21st European Marketing Academy Conference, Aarhus, Denmark, May 1992. (Eds) Klaus G Grunert and Dorthe Fuglede.

I Background

2. Iceland an Export Based Economy

Introduction

The aim of this chapter is to give the reader a short but comprehensive insight into economic development in Iceland during the last two decades and to emphasise the fundamental role of exporting for the Icelandic economy. To explain this development, historical economic figures, mainly drawn from official sources, are considered. No attempt is made in this chapter to explain economic development in Iceland in a theoretical context because the author felt that is outside the purpose of this study. The following chapter is divided into two main sections. The first section describes some of the geological characteristics of Iceland, its location and natural resources. The second section describes the development in Iceland, with special emphasis on the distinctive role of the fishing industry in generating Iceland's export income and its overall impact on economic performance. Furthermore, some international comparisons are made in an attempt to show the relative size of the Icelandic economy and indicating its performance in creating a standard of living which is on a level with what is among the best in the developed industrial countries.

2.1. Iceland

The four following sub-sections look at the country's location, land environment and climate, natural resources and population.

2.1.1. Location

Iceland is an island located from south to north between 63.0 17'5" and 67.0 08'8" northern latitude and from east to west between 13.0 16'6" and 24.0 32'1" western longitude. Iceland's nearest neighbouring countries, measured as a distance in kilometres are Greenland in distance of 287 km, Faroe Islands in distance of 420 km,

Scotland in distance of 798 km, and Norway in distance of 970 km.¹ Iceland is therefore located in the middle of the Northeast Atlantic area, the third most prolific fishing area in the world.² The country's fisheries jurisdiction is now 758.000 km², about thirty times greater than it was at the end of 1951.

2.1.2. Land Environment and Climate

Iceland's territorial size is around 103.000 km². Only about 20 per cent of the land area is suitable for farming and only 6 per cent of this area is currently being cultivated. The Icelandic coastline is characterized by fjords and inlets except in the south where there are sandy beaches without natural harbours. Most of the Icelandic interior is uninhabited due to harsh climate and lack of vegetation. Most of the population therefore lives in regions along the coast. About 70 per cent of the population lives in the capital Reykjavík and the surrounding area in the south west part of the country. The climate of Iceland is very much influenced by its geographical situation on the boundary of two very different air masses, one of "polar" origin and the other of "tropical" origin,³ but it is also affected by the confluence of two different ocean currents. Because of the submarine ridge between Iceland and Scotland, a branch of the North Atlantic drift - a continuation of the Gulf Stream - is deflected westwards and flows clockwise around the south and west coasts. The harbours on these coasts stay ice free all year round.⁴ Conditions in the sea areas, north and east of Iceland, are much more variable than in other areas. This is both because the amount of warm Atlantic water reaching the north coast varies from year to year, and because of large annual variations in drift-ice. Although drift-ice hampers fisheries, it increases fishing along its border because of increased vertical circulation.⁵

2.1.3. Natural Resources

The only natural resources in Iceland of any economic significance are rich fishing grounds on and around its continental shelf and substantial energy resources in the form of hydroelectric and geothermal energy. The energy resources in Iceland, the hydro and geothermal reserves, are vast in relation to the size and population of the country. The present use of electric energy in Iceland is approximately 4,400 GWh per annum but the estimated harnessable electric power from rivers and geothermal sources is no less than 50,000 GWh per annum, taking into account economic and ecological considerations. About 99.9 per cent of the electricity consumed is produced from indigenous energy resources, hydro-power and geothermal energy.

2.1.4. Population

The total population in Iceland is just over one quarter of a million, which makes the Icelandic nation one of the smallest in Europe. From 1971 to 1990 the total population in Iceland grew about 23.5 per cent, or from a total of 207,174 to 255,855 with an annual growth rate of just over 1.1 per cent. (Appendix 2.1.) This is a growth rate which is the third highest in Europe (only Ireland 1.3 per cent and Gibraltar 1.2 per cent, have a higher annual average growth over the period 1970 to 1987) and well above the average in developing countries and territories.⁶ About 57 per cent of the total population lives in the region of Reykjavík capital and about 38 per cent in the capital itself.

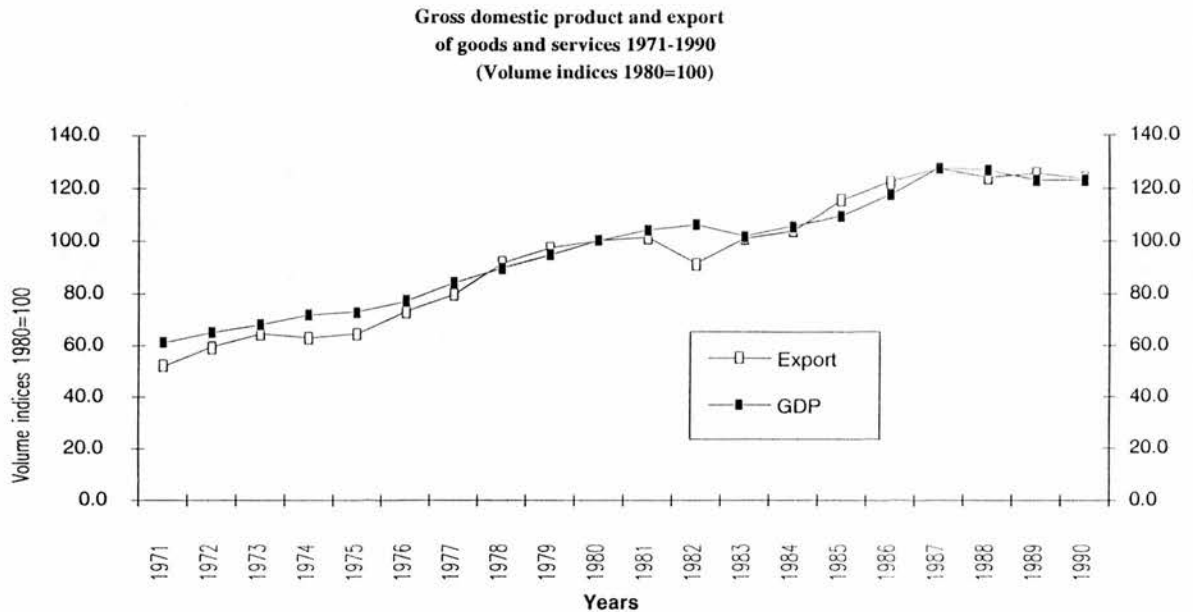
2.2. Economic Characteristics

This section describes in 10 sub-sections some of the main characteristics of the Icelandic economy.

2.2.1. Size of the Economy and Economic Growth

It is not an over-statement to argue that the Icelandic economy is excessively dependent upon the fishing industry and exporting of goods and services. The economic performance is largely based on the performance of the fishing industry, its export volume and foreign market prices. A study by Árnason⁷ indicates that of an average growth of 4.3 per cent in gross domestic product (GDP) during the period from 1945-1988, about 2.4 per cent can be attributed to the fishing industry. Iceland kept over the period from 1970-1990 the second highest growth in GDP per head whether measured in U.S. dollars at current exchange rate or in PPP (Purchasing Power Parity) U.S. dollars. Gross domestic product per capita grew on the average over the corresponding period around 4.5 per cent which was the second highest among OECD countries. Only Japan exhibited higher economic growth.⁸ The strong relationship between the volume of exports and gross domestic product is illustrated in Figure 2.1.. It shows how closely the GDP follows the volume of exports during the period from 1971-1990, except in the years 1981 and 1982 when there was a sharp fall in the volume of exports. This fall in exports was however, not reflected in the volume of GDP which means that this gap was bridged by increasing foreign debt. A study by Guðmundsson et al.⁹ indicates that in Iceland increased exports is followed by increase in GDP but for countries like France, the U.K. and the U.S. there are indications that increased exports are derived from an increase in GDP.

Figure 2.1.



Source

Sögulegt yfirlit hagtalna 1945-1988, February 1991.
The Icelandic Economy, development 1990
and outlook for 1991. May 1991.

In international comparison, the relative and absolute size of the economy is very small. In 1990 the total GDP in Iceland was 5.7 billion U.S. dollars which was just 0.11 per cent of what it was in the U.S., 0.58 per cent of what it was in the U.K. and 5.14 per cent of what it was in Norway.¹⁰

2.2.2. Inflation

Over the period since the finish of the World War II, Iceland has experienced higher and more consistent inflation than any other of the OECD countries. The annual average growth rates of the consumer price index over the period 1970 to 1980 was 33.2 per cent and over the period 1981 to 1989 it was 35.9 per cent.¹¹ The comparable figures for EEC countries was 10.4 per cent over the period 1970 to 1980 and for the latter period from 1981 to 1989 it was 6.7 per cent. Big fluctuations in

the income of the fishing industry, repeated devaluation of the Icelandic króna¹² and government economic policy which were geared to maintaining high employment were the main explanatory factors for the high inflation rate in Iceland.¹³ As is illustrated in Figure 2.2. the annual inflation rate (using annual percentage changes in the implicit price deflator of GDP) was above 30 per cent for the whole period from 1973 to 1984 and went up to nearly 60 per cent in the years 1982 and 1983. Due to changes in government employment policy, tighter monetary and fiscal policy and moderate wages agreements, inflation has decelerated and at the end of 1992 the annual inflation rate was the second lowest among the OECD countries.¹⁴

Figure 2.2.



Source

Sögulegt yfirlit hagtalna 1945-1988, February 1991.
The Icelandic Economy, development 1990
and outlook for 1991. May 1991.

2.2.3. Investment

Gross investment in Iceland accounted for a large share of the GDP during the seventies and eighties but, like the GDP itself, it was subject to substantial fluctuations. During the period from 1971 to 1990 the national wealth more than doubled¹⁵ and the average investment accounted for just over 24 per cent of GDP, but as illustrated in Table 2.1., it fluctuated from reaching its peak in 1974-1975 when it was above 30 per cent of GDP and down to less than 20 per cent of GDP between 1986 and 1990. During the years 1973 to 1975 there existed huge investments in stern-trawlers, electric power generation and distribution. In 1987 and 1988, real investment in fact reached its peak, when there was a wave of investment in fishing boats and trawlers, but about half of this investment in the fishing industry was in machinery and major alterations. During the period from 1971 to 1990, gross fixed capital formation in fisheries as a percentage of total fixed capital formation in Iceland was on the average just over 7.6 per cent. The comparable figure for fish processing was around 4 per cent. (Appendix 2.2.) At the end of 1989 the Icelandic fishing fleet was the nineteenth largest in the world, and in size, about 11.300 gross weight tonnage.

Table 2.1.**Gross investment as a percentage of GDP 1971 -1990**

Years	%	Years	%
1971	29.1	1981	24.4
1972	27.8	1982	24.3
1973	29.9	1983	21.5
1974	32.1	1984	21.0
1975	31.3	1985	20.5
1976	27.2	1986	18.7
1977	26.3	1987	19.7
1978	23.9	1988	18.9
1979	23.4	1989	18.8
1980	25.3	1990	19.7
Mean 1971-1980 = 27.63		Mean 1981-1990 = 20.75	
St.Dev. 1971-1980 = 2.98		St.Dev.1981-1990 = 2.11	

Source

Sögulegt yfirlit hagtalna 1945-1988, February 1991.
 The Icelandic Economy, development 1990
 and outlook for 1991. May 1991.

2.2.4. Labour Market

Changes in the age structure, where an increasing number of the population is of working age, and the dramatic increase in female participation in the labour market, are the main contributors to an increasing labour force. At the end of 1987 the total labour force in Iceland as a percentage of total population between ages 15 to 64 was 82.1 per cent. This was the highest participation ratio among the OECD countries.¹⁶ Labour force participation of females in Iceland has increased dramatically and at the end of 1987 the female labour force in Iceland as a percentage of female population was 46.2 per cent and had increased from a corresponding figure of 25.3 per cent at the end of 1968.¹⁷ Labour participation of males in Iceland has been declining steadily but slowly, even though it still is the highest among the OECD countries, with 91.0 per cent of the total male population in employment. In addition to the above changes there have been major changes in the pattern of employment by

industries. The development has been towards more employment of the workforce in the services sectors and less within the primary and the manufacturing sectors. The most pronounced changes have been in the agricultural sector where 12.4 per cent of the work force was employed in 1970 but only 4.9 per cent at the end of 1988. Over the same period employment within the banking and community services sectors grew as a percentage of the total workforce from 23.3 per cent at 1970 to 31.8 per cent at the end of 1988. The fishery sector employs just over 5.0 per cent of the work force. This percentage has remained quite stable in the last years. The fish processing sector accounts for about 6.5 per cent of the work force and has decreased quite rapidly since 1983 and 1984 in number of man years worked¹⁸ (Table 2.2.). The relative and absolute drop in employment in the fish processing sector is mainly due to increased productivity within the industry and to an increased proportion of fish being processed aboard the fishing vessels.

2.2.4.1. Unemployment

Ever since the beginning of the World War II there has been very little unemployment in Iceland. Over the period from 1971 to 1990 the average unemployment rate as a percentage of the labour force was about 1.1 per cent. This was well below what was common in other developed industrialized countries and below the average total in the OECD countries where the corresponding figure was around 6 per cent.¹⁹ (Appendix 2.3.) The low unemployment rate in Iceland was based on several factors, but most likely the following: First, there was a strong demand within the Icelandic society for full employment. Consequently, every government put minimum unemployment as a top priority in their political and economic policy and instead they sacrificed other economic and political objectives like a low inflation rate. Second, the adaptability of the working force in economic fluctuations seems to be considerable which is marked by things like excess demand

for labour, overtime work, high labour force participation rate, increased applications for loans to undertake university, or similar studying, and export or import of labour.²⁰ Since 1990 unemployment has increased to around 3.0 per cent at the end of 1992.

Table 2.2.

Employment by Industries 1970, 1975, 1980, 1985, 1988

Percentage breakdown. Man years worked.

	1970	1975	1980	1985	1988
Agriculture	12.4	9.8	7.9	6.1	4.9
Fishery	6.4	5.4	5.3	5.0	5.2
Fish Processing	7.8	7.9	9.3	8.0	6.6
Other manufacturing	15.2	14.7	15.2	14.6	13.4
Construction	10.7	12.1	10.1	9.5	9.3
Electricity, water and Sanitary service	0.7	0.5	0.9	0.9	0.9
Commerce	13.5	13.8	13.4	15.0	16.0
Transport and Communication	8.5	8.1	7.3	6.8	6.6
Banking and other services	10.9	11.6	12.6	13.9	14.4
Community services	12.4	13.9	15.7	16.5	17.4
Other	1.5	2.2	2.3	3.7	5.3
Total	100.0	100.0	100.0	100.0	100.0

Source

Tölfræðihandbókin 1984

Sögulegt yfirlit hagtalna 1945-1988

Hagtíðindi, árg 75 no 7, 1990

2.2.5. Consumption and Consumer Expenditure

Total consumption in the economy can by definition be divided into private final consumption expenditure and government final consumption expenditure. Table 2.3. shows the percentage contribution of private and government final consumption to GDP for the years 1970 to 1990. As is illustrated in Table 2.3 private consumption

remained about 60 per cent of GDP over the period from 1971 to 1990 but fluctuated much more in line with changes in GDP than the government final consumption which showed a constant increase in volume as a percentage of GDP. (Appendix 2.4.)

Table 2.3.

Private and government final consumption as a percentage of GDP		
Year	Private final consumption	Government final consumption
1970	61.4%	13.0%
1975	58.5%	16.5%
1980	57.1%	16.4%
1985	62.7%	16.9%
1990	60.2%	19.0%

Source

Sögulegt yfirlit hagtalna 1945-1988

The composition of private consumption in Iceland has shown remarkable changes during the last two decades. The relative importance of food, beverage and tobacco has declined constantly but substantial increases have been in direct purchases abroad by resident households and in personal transport equipment. Consumption of fish and fish products per capita in Iceland is about 35 to 40 kilos (consumption weight). A considerable decrease has occurred in fish consumption per capita in Iceland since reaching its peak in the mid sixties when per capita consumption was about 74 kilos (consumption weight). On the other hand, consumption of meat products increased dramatically from about 50 to 55 kilos per capita in the late sixties to 70 to 75 kilos per capita in the late eighties. This increase in the consumption of meat products was solely due to increased consumption of pork and poultry, because consumption of sheep meat and horse meat remained stable or decreased.²¹

2.2.6. Foreign Trade

Export of goods and services represented on the average about 37.0 per cent of gross domestic product in Iceland over the period from 1971-1980 (St.Dev. 1.9) and 37.3 per cent from 1981-1990 (St.Dev. 3.02). This is much higher than the average for European countries within the OECD where exports represented about 28 per cent of GDP for the respected periods.²² The annual average growth in the volume of exports from Iceland during the period from 1971-1989 was around 5.5 per cent. This is marginally higher than it was on the average for countries within the EEC, but slightly less than the average for all the OECD member countries which was around 5.6 per cent.²³ The main reason for marginally higher export growth within the OECD countries than within the EEC is the exceptionally high export growth in Japan during this period. (Appendix 2.5.) Figure 2.3. shows the evolution of exports from 1971 to 1990 by using value and volume indices where the value and volume of 1980 has been set equal to 100. As illustrated in Figure 2.3. the increase in value of exports was much more than the increase in volume which indicates favourable price development and demand for the exported goods during this period.

Figure 2.3.

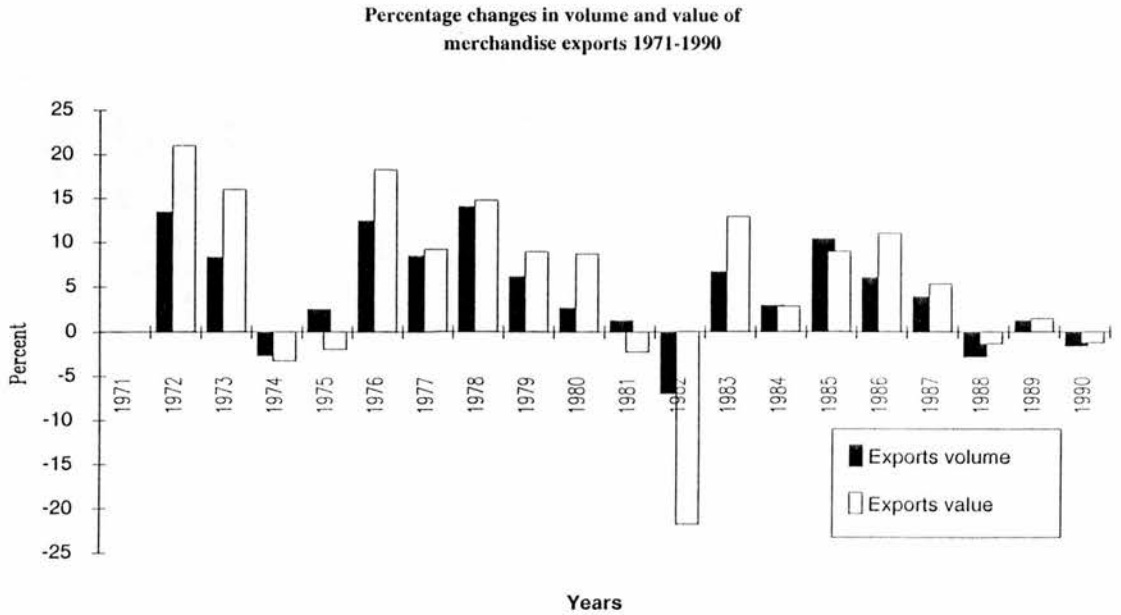


Source

Sögulegt yfirlit hagtalna 1945-1988,
The Icelandic economy developments 1990 and outlook 1991

Export income and national output have varied more in Iceland than in any other OECD country as a result of both unpredictable changes in the marine environment and the sensitivity of the economy to changes in the terms of trade.^{24 25} Figure 2.4. illustrates clearly these drastic fluctuations in export prices and the export volume, showing percentage changes in volume and value of merchandise exports from 1971-1990. The salient feature in Figure 2.4. are the big annual increase in the value and volume of exports during most of the seventies and then the sharp downward movement in exports in 1982 which was mainly due to sharp reductions in the fish catch and exports of marine products in conjunctions with unfavourable price development in some of the export markets for marine products. The period from 1983 to 1988 was, like the period from 1973 to 1982, characterised by steady growth in the volume and value of merchandise exports. In 1988 this growth came to an halt and both the volume and value of exports remained more and less static from 1988 to 1990 with only minor fluctuations.

Figure 2.4.



Source

Sögulegt yfirlit hagtalna 1945-1988.

The Icelandic economy developments 1990 and outlook 1991.

Exports of fish and fish products are the mainstay in Iceland's merchandise exports and as illustrated in Table 2.4. marine products represented on the average just over 76 per cent of the total merchandise exports during the period from 1971-1990. Aluminium and ferro-silicon are the only manufactured goods of any export significance and dominated by two companies. As indicated in Table 2.4., manufactured goods represent about twenty per cent of the merchandise exports.

Table 2.4.

**Percentage breakdown of merchandise exports
by commodity groups 1971 - 1990.**

Average for each 5 year period.

Commodity group	71-75	76-80	81-85	86-90
Marine products	77.0	75.4	74.5	76.1
Agricultural products	3.0	2.3	1.3	1.7
Manufactured goods	18.6	20.8	22.4	19.5
Miscellaneous	1.4	1.6	1.7	2.7
Total	100.0	100.0	100.0	100.0

Source

Sögulegt yfirlit hagtalna 1945-1988.

Hagtíðindi, 1987-1991

It is noteworthy in Table 2.4. that marine products represented on the average a higher ratio in the total merchandise exports during the five years period from 1986-1990 than they did from 1976-1985. If export of services is included, the respective share of marine products in the total export value was just over 54 per cent on the average during the respective period, which is markedly lower than it was on the average from 1981 to 1985 and from 1986 to 1990. These facts indicate not only the volatility which exists in exports revenue but also the uniqueness of the Icelandic economy in the group of developed market economy countries. Exports of primary commodities²⁶ as a percentage of total exports (excluding fuels) from Iceland represented 95.6 per cent in 1970, 92.1 per cent in 1980 and 91.5 per cent in 1990. None of the other developed market economy countries has a percentage of similar size. Iceland is in this respect, however, similar to many developing and least developed countries which usually base their exports on natural resources.²⁷ Primary commodity markets usually exhibit much more instability than those of manufactures²⁸ and it is commonly believed that a higher ratio of primary products in

a country's export means more instability and fluctuations in its export earnings. Others argue that fluctuations in export earnings are more likely to be based on short-run responses of demand and supply to changes in prices than on a clear distinction between primary and non-primary products.²⁹

Table 2.5.

**Exports of marine products as a percentage of total
export of commodities and services 1971 - 1990**

Years	%
1971 - 1975	50.1
1976 - 1980	54.2
1981 - 1985	57.1
1986 - 1990	55.3

Source

Sögulegt yfirlit hagtalna 1945-1988.

2.2.6.1. Export Markets

During the last two decades, important changes have materialized in the merchandise exports in terms of market areas. This is illustrated in Table 2.6. and Table 2.7. Table 2.6. shows a percentage breakdown and five years period average for the merchandise exports by market areas from 1971 to 1990. Table 2.7. shows a similar breakdown for the years 1986 to 1990. In 1971 about 36.7 per cent of the merchandise exports went to the U.S. market, 35 per cent to the EFTA market, 11.7 per cent to the EEC market, 10.9 per cent to the East European market, 0.5 per cent to the Japanese market and the rest 1.7 per cent went to other markets. At the end of 1990 this picture had changed and the relative share of the EEC market had increased markedly up to 67.7 per cent, the U.S. market had declined down to just under 10 per cent, the EFTA market down to 8.6 per cent and the Japanese market had gone up to 6 per cent.³⁰ As illustrated in Table 2.6. and Table 2.7. the shift in exports to the EEC

market showed a major phase during the period 1986-1990. During this period the proportion of merchandise exports to the EEC increased from just under 40 per cent of total merchandise exports in 1985 to nearly 68 per cent in 1990. If the exports to Spain and Portugal were added to the EEC figure in 1985 (Spain and Portugal became members of EEC from 1st of January 1986) the share of exports to the EEC grew from 49 per cent in 1985 to just under 68 per cent in 1990. This means an annual average growth of exports to the EEC of about 5.4 per cent during the reference period. The principal countries for merchandise exports within the European market i.e the EFTA and the EEC were: Britain, W-Germany, France, Spain, Portugal, Switzerland and Denmark. Of these countries the most pronounced growth of exports was to the U.K. In 1971 about 13.1 per cent of the total merchandise exports went to the UK, 16.5 per cent in 1980, but reached its highest level, 25.3 per cent in 1990.³¹

Table 2.6.

Merchandise exports by market areas 1971-1990.
Percentage breakdown. Average for each 5 year period.

Market areas	71-75	76-80	81-85	86-90
EFTA 1), 3), 4)	17.9	15.4	15.7	9.6
EEC 1), 4), 2)	31.1	33.8	35.3	58.9
East Europe	11.4	9.4	8.3	4.7
Other European 2), 3), 4)	5.5	5.5	5.1	1.2
U.S.	29.0	27.6	26.0	15.5
Japan	1.8	1.9	3.3	6.7
Others	3.3	6.4	6.3	3.4
Total	100.0	100.0	100.0	100.0

Notes:

- 1) U.K. and Denmark, left EFTA on the 1st of January 1973 and became members of the EEC from that time. Adjustments has been made for this in and figures for export to the U.K. and Denmark are included in the EEC figures for 1971 to 1975.
- 2) Greece is included in figures for the EEC after 1st of January 1981, but was previously included in "Other European" figures.
- 3) Ireland became a member of the EEC from the 1st of January 1973. Figures for export to Ireland are included in the EEC figures 1971-1975
- 4) Portugal and Spain are included in the EEC figures from 1st of January 1986, but were before that included in figures for EFTA and Other European.

Source

Sögulegt yfirlit hagtalna 1945-1988.
Hagtíðindi 1987-1991.

Table 2.7.

Merchandise exports by market areas 1986 - 1990.
Percentage breakdown.

Market areas	1986	1987	1988	1989	1990
EFTA	10.1	8.2	10.0	11.0	8.6
EEC	54.1	57.4	58.9	56.4	67.7
East Europe	5.5	4.7	5.4	5.0	3.0
Other European	0.7	0.8	1.1	1.5	1.8
U.S.	21.7	18.3	13.6	14.3	9.9
Japan	4.8	7.8	7.6	7.1	6.0
Others	3.1	2.8	3.4	4.7	3.0
Total	100.0	100.0	100.0	100.0	100.0

Source

Sögulegt yfirlit hagtalna 1945-1988.
Hagtíðindi 1987-1991.

2.2.6.2. Export Structure

A major characteristic of merchandise exports from Iceland is a high level of sectoral concentration and domination by a few companies. As illustrated in Table 2.8. the combined share of the 5 largest exporters declined from 77 per cent of total export in 1979 down to 55 per cent in 1990. Merchandise exports has, therefore, become more diluted in recent years and an increased number of firms has started exporting.

Table 2.8.

The combined share of the 5 and 10 largest exporters in Iceland as a percentage of total value of exports, 1979 - 1990

Year	Combined share of the 5 largest exporters	Combined share of the 10 largest exporters
1979	77.0 %	84.0 %
1980	69.4 %	80.4 %
1981	69.3 %	82.5 %
1982	76.7 %	87.6 %
1983	75.2 %	86.7 %
1984	68.0 %	79.7 %
1985	65.8 %	77.8 %
1986	66.2 %	76.8 %
1987	61.8 %	70.3 %
1988	56.3 %	64.7 %
1989	57.5 %	64.2 %
1990	55.5 %	62.1 %

Source

Hagtíðindi (numerous issues)

2.2.6.3. Foreign Balance

As a consequence of fluctuations in exports, Iceland has experienced fluctuations in its balance of trade. During the period from 1971-1990 the balance of trade remained negative in twelve of the twenty years.

Gross savings in the economy over the period from 1971 to 1990 were on average just over 20 per cent of GDP and, like gross investment, fluctuated considerably. Gross savings as a percentage of GDP have therefore been much lower on average than gross investment. This means, according to the national accounting standards (United Nations, national accounting standards) that there existed some current account deficit in this period, or that there were some decreases in stocks. Current account deficit was also one of the main characteristic features of economic development in Iceland during this period. The current account balance remained in surplus in only one of the twenty years, after adjustments had been made for changes in stock. The result of this current account deficit was increased net foreign debt which increased from being 48.6 per cent of total export revenue and 20.1 per cent of GDP at 1971 to become 1.39 times more than the export revenue at 1990 and 47.8 per cent of GDP.

Conclusions

This chapter has outlined some of the main characteristics of the Icelandic economy, such as its relative big geographical distance from other countries and market areas, small population, high dependence on exporting of primary commodities and the relative high level of GDP per capita compared to other developed countries. The size of the economy is in international comparison very small. It is importantly driven by exporting and dependent on the export performance of the fishing industry. Around 70-80 per cent of the country's annual merchandise export value derives from the exporting of marine products. This dependence on exporting of natural resources has among other things led to more fluctuations in Iceland's export income and gross domestic products than in any other OECD countries.

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- ⁸ Handbook of international trade and development statistics 1989, United Nations, N.Y. 1990.
- ⁹ Guðmundsson, Guðmundur, Harðarson, Magnús. "Sveiflur í Landsframleiðslu og útflutningi og samanburður við önnur lönd." Fjármálatíðindi, Jan-April 1992. They investigated and compared the size of fluctuations in GDP and in export value between eleven industrialised countries, during the period from 1952-1989. Their main conclusions were that economic growth was around the average for the countries researched, but fluctuations in GDP and in export were more than in any of the other countries investigated.
- ¹⁰ OECD in Figures, Supplement to the OECD Observer No. 170 June/July 1991. OECD, Paris 1991.
- ¹¹ Handbook of international trade and development statistics 1989, United Nations, N.Y. 1990, pp 55-57.
- ¹² Sigurðsson, Jón. "Verðbólga á Íslandi 1914-1974." Fjármálatíðindi, 21 árg. pp 29-43
- ¹³ OECD Economic Surveys, 1990/1991, OECD Paris 1991
- ¹⁴ OECD Economic Surveys, 1990/1991, OECD Paris 1991
- ¹⁵ Investment 1945 - 1989, National Economic Institute, June 1991.
- ¹⁶ OECD, Historical Statistics 1960-1987, Paris 1989 p34.
Corresponding figures for OECD countries for the year 1987 are on the average 67.8 per cent and for the EEC countries they are 65.4 per cent.
- ¹⁷ OECD, Historical Statistics 1960 - 1987, Paris 1989 p.34
Only Denmark (49.4), Finland (47.8) and Sweden (49.9) have higher ratio: female labour force / female population, within the OECD countries. The average percentage for the OECD countries at the end of 1987 was 37.2 per cent and for the EEC countries it was 33.4 per cent.

¹⁸ Man years: One man year is equal to 52 working weeks and is equal to a work contribution of one man working full-time for one year, but can also apply to part-time jobs of more than one person who collectively work one man year. Attention should be paid to the fact that calculations of man years does not take into account that the number of working hours behind each man year could vary because of overtime.

¹⁹ OECD Economic Outlook, 48. OECD, Paris, December 1990.
Calculated from Table R.19 page 193

²⁰ Briem, Ólafur "Langtíma ójafnvægi á vinnumarkaði" Fjármálatíðindi 1990.

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²² OECD, Historical statistics, 1960-1990, Paris 1991.

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²⁵ Guðmundsson, Guðmundur. Harðarson, Magnús. "Sveiflur í landsframleiðslu og útflutningi og samanburður við önnur lönd." Fjármálatíðindi, Jan-April, 1992.

²⁶ "Primary commodities are normally defined as products of the land, produced by forms of agriculture (including food, agricultural raw materials, livestock and timber) or extracted by mining, and subjected to a limited amount of processing. The extent to which various primary commodities are processed before they enter international trade differs considerably, and not all producing countries process their product to the same extent as other producers." Thoburn, John. T., Primary Commodity Exports and Economic Development. Theory Evidence and a Study of Malaysia. John Wiley & Sons, page 3.

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²⁸ Thoburn, John. T. Primary Commodity Exports and Economic Development. Theory, Evidence and a Study of Malaysia. John Wiley and Sons.

²⁹ Macbean, Alasdair I. Export Instability and Economic Development George Allen & Unwin Ltd. 1966.

³⁰ Sögulegt yfirlit hagtalna 1945-1988, pp 148-149, Þjóðhagsstofnun, Reykjavík, February 1991. Hagtíðindi, numerous issues 1987-1991.

³¹ Sögulegt yfirlit hagtalna 1945-1988, pp 148-149, Þjóðhagsstofnun, Reykjavík, February 1991.

3. The Icelandic Fishing Industry

Introduction

In the previous chapter we showed how economic performance in Iceland is heavily reliant on the performance of the fishing industry, its exports volume and foreign market prices. Value added¹ in the fishing industry as a percentage of gross domestic product remained on the average 15.5 per cent (St.Dev. 2.12) during the period from 1970-1987.² In 1988 the country's share of the total world catch in inland and marine fishing areas was about 1.8 per cent and about 2.1 per cent of the total world catch in marine fishing areas.³ Iceland is among the ten principal exporting nations of fishery commodities in the world in terms of value, with a share of around 3.5 per cent.⁴ (Appendix 3.1.) Consumption of fish and fish products in Iceland is on the average about 85-90 kilos (landed weight) per capita⁵ which is one of the highest per capita consumptions in the world. This means however, that only between one and two per cent of the total fish catch is consumed domestically and the remainder is exported. The term fishing industry comprises here the activities of fishery (fish catching), fish processing and exporting. This classification which will be used in this thesis is quite convenient and conventional and has been used in various studies on the fishing industry both in Iceland and elsewhere, like in the U.K.⁶ Sigfús Jónsson described the fishing industry as consisting of four sectors viz. the three sectors included in our definition and an additional one i.e. the organizational sector which is concerned with the infrastructure, services and government policies necessary for the other three sectors of the fishing industry.⁷ According to Jónsson the main characteristics which distinguish the fishing economies, which are totally dependent on fish exports, from those who dispose their whole catch on the home market, are that exporting economies normally have large processing and export marketing sectors, while the latter nations are likely to have simple processing activity and a wholesaling sector for inland distribution.

During the 1980s on the average around 55 per cent of the total export value of marine products from Iceland, was accounted for by various frozen products, around 20 per cent by salted products, around 11 per cent by fresh products, between 8 and 9 per cent by fish oil and meal, and by each of the two product groups canned and dried with a share of around 2.5 per cent.

The chief aim of this chapter, which is divided into six main sections is to provide a background to the main substance of this thesis which is researching the nature and behaviour of the export sector of the Icelandic fishing industry.

The first section reviews the literature on the Icelandic fishing industry which currently is very much concentrated in the fishery area.

The second section describes some of the main aspects of the Cod Wars and their economic consequences for the Icelandic fishing industry and international development.

The third section outlines some of the characteristics of the industry's business environment such as government policy and legislation, and import tariffs and quotas in the main export markets.

The fourth section reviews some of the main characteristics of the fishery sector such as its historical development, seasonal fluctuations in the fish catch, regional distribution of fish landings and principal species harvested.

The fifth section studies the emergence of the processing sector, its current structure, and describes the main methods used in fish processing and utilization of the fish catch.

The sixth and final section briefly outlines the emergence of the export sector in the 1930s and 1940s, its development and structural changes during the 1980s. The growth in exporting of marine products in the 1970s and 1980s is described and analysis shows how some of the "big export organisations" lost a considerable share of the total exports of marine products in the 1980s. The important shifts in

distribution between export markets during the second half of the 1980s are also examined. Finally, a brief overview is provided of the main marine products exported, their relative importance in total exports and their distribution by export markets.

This chapter is mainly based on secondary data sources such as official statistics, individual articles, documents, dissertations and books on the fishing industry in Iceland and other countries. The division of the country into seven regions, used in this chapter and other chapters in this dissertation, is purely administrative and is in line with practice in published official statistics in Iceland.

3.1. Existing Literature on the Icelandic Fishing Industry

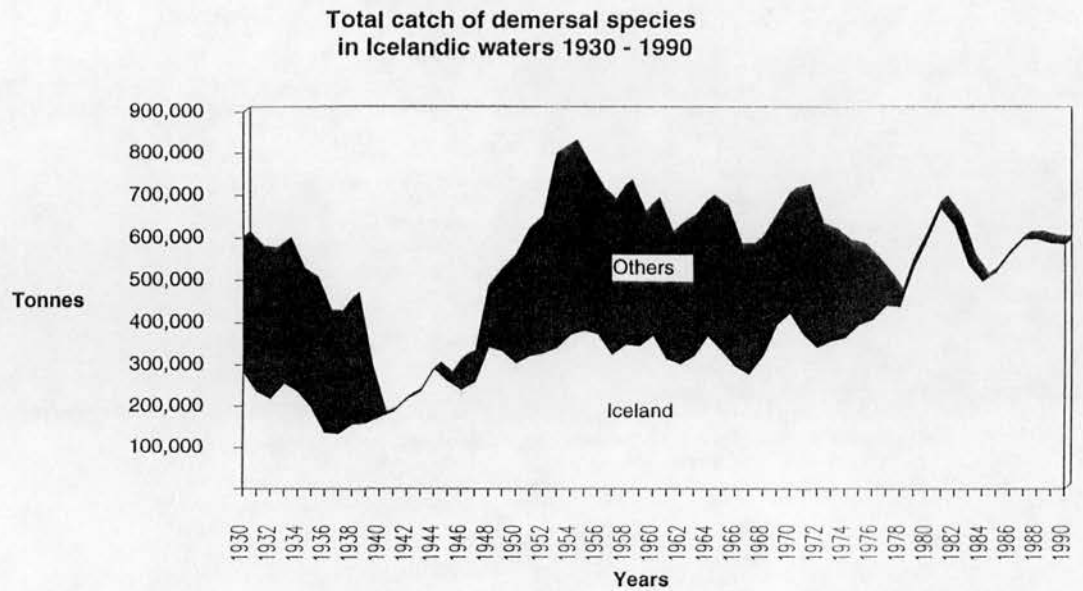
The Icelandic fishing industry has in recent years attracted increasing attention among academics, policy-makers and others. A great deal of the work of academics has been concentrated in the area of fishery but much less attention has been given to the onshore sectors of the fishing industry i.e. processing and exporting. The literature on fish processing and fish exporting (marketing) is very deficient in Iceland. The recent works by Felixsson,^{8,9} Kristgeirsson,¹⁰ and Níelsson¹¹ and some other Icelandic economists represent an important deviation from this trend, and are very valuable contributions to the scarce literature on the markets for Icelandic marine products. In their work these researchers have attempted to construct a comprehensive econometric supply and demand model for the most important Icelandic groundfish markets. The work by Jensson¹² is also an important exception from this general pattern. He researched problems in production planning in fish processing plants. These problems are related to the randomness of perishable raw materials received from day to day. He shows how the decision problems in fish processing plants are the reverse of most production systems, where planning is based on sales forecasts. His results indicated that the most important daily decisions

in fish processing plants are the product mix and manpower allocation. Within the geographical literature, Jónsson¹³ has made an outstanding contribution by studying development of the Icelandic fishing industry during the period from 1900-1940. Jónsson later extended his work to cover the whole period up to 1983.¹⁴ In his prior work Jónsson examined economic- and regional development in Iceland during the period from 1900-1940. He did his study within the contextual framework of the export-base model. Jónsson concluded that economic progress during the reference period was by in large determined by the country's ability to expand exports of fish products, mainly salted cod.¹⁵ Research into the Icelandic fisheries sector from an economic perspective, had a landmark in 1974 with the work of Hannesson.¹⁶ In his work Hannesson revealed many of the problems associated with exploitation of common resources and described a model of fisheries where by using bio-economic equations he estimated maximum economic yield effort of the Icelandic fishing grounds taking into account the maximum sustainable yield of the stocks of fish. Since Hannesson undertook his work a wealth of studies have been undertaken into this area of Icelandic fisheries. After introduction of a comprehensive quota system into demersal fisheries in Iceland in 1984, a further impetus was given to research into this area, and the subject attracted further attention among scientists. Most of these studies have dealt with problems related to the management of fisheries and evaluations of the interaction between biological and economic factors and have also considered various social aspects of fisheries management and exploitation of common property resource. Significant studies in these area have been carried out by Árnason,^{17 18 19 20} Hannesson^{21 22 23 24} and Helgason.^{25 26 27 28 29 30} The three above researchers along with Ólafsson are significantly involved in a work with various other researchers which aims to build a comprehensive simulation model for testing different ideas and aspects of fisheries management.³¹ Other interesting literature in this area are by Sigurdsson and Stefánsson,³² Gylfason³³ and Jensson.³⁴

3.2. The Cod Wars

The Icelandic fishing industry and its development since the World War II can hardly be described without mentioning the Cod Wars and the important decisions made by the Icelandic governments which lead to an increase in Iceland's fisheries limits during the period from 1952-1975. This thirty-fold increase in the fisheries limits was achieved in four extensions. In 1952, Iceland extended its fisheries jurisdiction from 3 to 4 miles. In 1958 the fisheries jurisdiction was extended from 4 to 12 miles, in 1972 from 12 to 50 miles and in 1975 from 50 to 200 miles. After this last extension of the fisheries limits, Iceland's fisheries jurisdiction covered an area of about 733,470 km² but was only 24,530 km² before the extension at 1952. During the period from 1950-1974 foreign fishing trawlers caught on the average about 360,000 tonnes of demersal species in Icelandic waters, with the British and the German as the principal catching nations.³⁵ In 1970 there were on the average 107 foreign trawlers operating in Icelandic waters. Of these trawlers about 60 per cent of them were British and about 30 per cent from West-Germany. At the end of 1977 only between four and five trawlers from Belgian and Faeroese were operating in Icelandic waters.³⁶ As indicated in Figure 3.1. which shows the total catch of demersal species in Icelandic waters from 1930 to 1990, the total catch of demersal species went up to 800 thousand tonnes in the beginning of the 1950s. As illustrated in Figure 3.1. foreign nations caught about half of this catch during the period since the World War II up to 1972. It was apparent at that time that the Icelandic fishing grounds were over-exploited and that strong measures needed to be taken to preserve the fishing stocks and protect the nursery grounds in the Icelandic bays and the shallow waters of the continental shelf. Conservation and vital economic interests for the Icelanders were the common theme of arguments used by all the Icelandic governments in the four disputes (Cod-Wars).³⁷

Figure 3.1.



Source

Útvegur, various issues, Fiskifélag Íslands.

As an economic sanction on Iceland both the British and the German governments imposed landing bans on Icelandic ships. Britain during all the four conflicts and Germany during the last two. Another economic sanction imposed on Iceland by Britain and Germany during the third conflict was a special clause in Iceland's trade agreement with the EEC (European Economic Community) which stipulated (Protocol 6) that Iceland would not enjoy specified reductions of import duties on fish into the EEC countries unless a satisfactory solution could be found for the EEC members in their dispute with Iceland over the 50- mile limit. Because no agreement was reached with the Germans over the 50- mile limit, the sanction was in effect for all exports of fish from Iceland (included in Protocol 6) to the EEC countries until 1976 when agreement was finally reached over Iceland's 200- mile limit.³⁸ Iceland's battle and victory for a 200 mile exclusive economic Zone had severe consequences for the fishing industries in those countries which previously did have a large fleet of deep-sea trawlers fishing in Icelandic waters, but³⁹ it had also important international

consequences because from 1977, a 200- mile exclusive economic Zone's was internationally adopted.

3.3. Government Policy and Business Environment

Through most of this century the operating performance of the fishing industry has been the mainstay of economic and regional policy in Iceland and the subject of a number of government interventions, usually aimed at manipulating profitability within the industry, influencing investment in it, and regulating its structure. As with most industries in industrialised countries, the Icelandic fishing industry is shaped by a number of official laws and government regulations. During the period from the 1930s until the mid 1980s an extensive and complicated system of different Fisheries Funds was build-up by a series of Government laws and regulations in order to resolve various ad hoc problems arising within the fishing industry.⁴⁰ In 1986 this extensive Fund system was rationalized and many previous taxes and levies in the fishing industry were abolished.⁴¹ Among the taxes abolished was a special "export charge"⁴² which was collected on all exports of fish products.

This section lists the most important laws and government regulations which are currently affecting the Icelandic fishing industry, and also deals with other issues which are vital for the shaping of its operating environment.

3.3.1. Fisheries Management

The most influential legislation for the industry is the Fisheries Management Act⁴³ which has been in force since 1st of January 1991 but is in fact an extension of the fisheries policy applied since 1984, when a comprehensive quota system for cod fisheries was implemented for the first time in Iceland. Similar principles had been applied for herring fisheries from 1975 and for capelin fisheries from 1980.⁴⁴ The principal objective of the Fisheries Management Act is "to ensure the preservation and sensible utilization of the marine resources that are found in Icelandic waters and

thereby guaranteeing full employment and stable settlement of the country".⁴⁵ Since the comprehensive ITQ system (Individual Transferable Quotas) was introduced into nearly all demersal fisheries in 1984, an active trading market has gradually developed for quotas, and in the fishery year 1991-1992 nearly half of the industry's overall quota volume was traded between parties. (Appendix 3.2.). This has led to much increased concentration in the ownership of quotas.^{46 47} In the quota year 1991/1992 the six biggest quota holders controlled about 18 per cent of the demersal quotas.⁴⁸ Despite quite diverse opinions on various aspects of the quota system, most economists agree that the system has increased efficiency in fishery, and by further improvements of the current system the annual yield from fisheries could be around 5-6 per cent of GDP.⁴⁹

3.3.2. Export Control

Until the late 1980s, all exporting of marine products was subject to the granting of a government authorisation. With, few exceptions, exporting of marine products is now free,⁵⁰ but in cases where special permits are required, such as in the exporting of fresh fish and salted lump-fish roe, the Ministry of Foreign Affairs, according to law, governs the issuing of such export permits. Prior to 1980 most of the fish sold fresh and unprocessed by Icelandic firms in foreign markets was landed directly from the vessels at the foreign ports, mainly in Germany and the Humberside area. At that time the Association of Icelandic Fish Vessels Owners tried to control the supply of fish to these fresh fish markets by issuing permits to individual vessels or vessels owners to land and sell their catch at these fresh fish markets abroad. When the export of fresh fish in containers started in 1984 it was under no official control. Because the export of fresh fish in containers increased enormously during the following years it often led to excess fish supply in the main fresh fish markets abroad, increased uncertainty and lower prices. After various measures had been

taken to control the export of fresh fish in containers between 1988 and 1990, a special body, (The Fresh Fish Allocation Board) comprising of representatives from a wide spectrum of the industry, was set up to control exports of processed and unprocessed fresh fish by issuing permits to fresh fish exporters or vessel owners. In practice, only the export of unprocessed fish has been restricted.⁵¹

In 1935, Síldarútvegsnefnd (Iceland Herring Board) was established by legislation, and since 1945 it has retained the sole right to export salted herring from Iceland. As stipulated in the Act,⁵² nobody is allowed to export or sell salted herring without the permission of Síldarútvegsnefnd. An exception from this Act is exporting of salted herring in the form of canned, preserved or other consumer packages.

From its foundation in 1932 until 1st of January 1993, Sölusamband íslenskra fiskframleiðenda, abbreviated S.Í.F. (The Sales Union of Icelandic Fish Producers) handled virtually all the exports of salted groundfish from Iceland. Although the company was never granted a monopoly licence by law, it did until January 1993, usually enjoy monopoly conditions in the exporting of salted groundfish from Iceland as the company were in practice granted sole permission to export salted ground fish on a year to year basis. In the last two or three years prior to the formal abolish of S.Í.Fs monopoly conditions in exporting, some exemptions were made by the Ministry of Foreign Affairs by granting a limited number of export permits to other companies to export salted groundfish products.

3.3.3. Export Income Stabilization

In 1969 a special fund "The Price Equalization Fund" was set up as an attempt to even out fluctuations in export prices and create a more stable flow of income for the processing sector. The Fund was supposed to receive a fraction of the export prices at times when it was above a pre-determined price level and pay it back when prices reached some limits below it.⁵³ By a law passed in 1990⁵⁴ some changes were made

to the functional role of the Fund, such as including all fish and fish products exported from Iceland, but by a previous law some products were excluded. By a government decision in 1993 "The Price Equalization Fund" was dissolved.

3.3.4. Quality Control

In 1910 an official fish grading control on the export of fish products from Iceland was first established. In the beginning, this official quality control only applied to the export of salted fish, but when exports of fish and fish products in other forms started, such as of frozen, fresh and canned, it was extended to include these products.⁵⁵ In 1984 the Icelandic Fish Quality Institution (IFQI) was established,⁵⁶ and from that time all manufacturers and exporters of fish and fish products from Iceland were required to hire authorised inspectorates to guarantee quality standards of their products, or buy such a service from the IFQI. As of 1st of January 1987, IFQI ceased fresh fish quality inspection, and the sellers and buyers themselves were made responsible for it. The abolition of the fresh fish inspectorate by the IFQI brought some changes to its chief role as an organization, because after that more emphasis was put on controlling hygiene standards and production conditions in fish processing plants, but product quality control and product inspection were kept at minimum possible level. By a law passed in 1992, the operation IQFI was halted, and producers and exporters made responsible for all product quality control and product inspection. The system introduced in 1993⁵⁷ instructs all producers of marine products in Iceland to have a formal contract with qualified "Inspection Companies" (Skoðunarstofur) which specialise in checking hygiene and product quality standards and regulating the internal quality system used by firms in the industry.

3.3.5. The Wetfish Price

From 1961 until the inception of the first fish auction market in Iceland in 1987 the "Fish Industry Price Determination Board" set the minimum wetfish prices for every significant species and quality of fish. The Board comprises of an equal number of representatives from the sellers of fish (catchers) and the buyers of fish (processors). Even though the Fish Industry Price Determination Board officially still exists, its role has changed fundamentally and now wetfish prices for all caught fish and fish by-products (fish waste) landed in Iceland is free. Due to vertical integration in the Icelandic fishing industry^{58 59} only a portion of the total fish landed in Iceland is auctioned. Since the introduction of the fish auction markets, wetfish prices at the auction markets have generally been markedly higher, than the registered prices of fish traded directly between fishermen and processors.⁶⁰ However, the share based salary system in the fishery sector, i.e. where every crew members salaries are based on shares in the value of the catch, and an article in the "wages agreement" between the fishermen and the vessels owners, which stipulates that the fishermen should always be guaranteed the highest possible price for the fish landed,⁶¹ has effectively meant that wetfish prices of fish sold directly to processors takes account of the domestic fish auction markets prices. In 1990 about 10.5 per cent of the total catch of demersal species was auctioned at domestic auction markets and around 55 per cent was landed and sold directly to fish processors. In 1989 the respective figures were 7.8 per cent and 60.5 per cent.⁶² In 1991 around 25 per cent of the total catch of haddock and 13 per cent of the cod catch was auctioned at the domestic auction markets. The catch of pelagic species such as capelin is usually sold directly to the fish reduction plants at prices which are either fixed or based on tender, and in the case of the herring catch the same usually applies whether sold for reduction or for salting.

3.3.6. Foreign Exchange Rate Policy

Until the middle of 1993, the exchange rate of the Icelandic króna was centrally determined by the Central Bank of Iceland, on the basis of a trade weighted basket of currencies,⁶³ within a general framework set by the government from time to time in view of prevailing economic circumstances. Since the introduction of a new law⁶⁴ in May 1993 the exchange rate of the Icelandic króna is principally determined by the forces of supply and demand in the domestic and international markets, although, the Central Bank of Iceland continues to play a leading role in pursue the foreign exchange rate policy of the Icelandic government. As for every other exported products, export prices for fish products are, importantly decided by the exchange rate between foreign currencies and the Icelandic króna. In the whole Post-War era, except during the last 3-4 years, Icelandic governments have routinely pursued the policy of adjusting the exchange rate of the Icelandic króna as in order to maintain reasonable profitability⁶⁵ in the fishing industry.⁶⁶ A good deal of Iceland's inflation in the post-War period is the result of this policy of repeated devaluation of the Icelandic króna.⁶⁷

3.3.7. Profitability

Although profitability in the fishing industry is closely correlated with export prices and the real exchange rate⁶⁸ of the Icelandic króna,⁶⁹ it also depends importantly on various other factors, such as the costs of raw material,⁷⁰ labour and of capital. In earlier years manipulation of income prices for the fishery and processing sectors, by deciding centrally all wet fish prices, was a decisive factor in how profit or loss was shared by these two sectors. In recent years, profitability of the fishing industry has generally been poor. (Appendix 3.3.) Excess capacity and high operational gearing of many companies in the harvesting and processing sectors, and related debt burdens, is one of the reasons for the negative net profit despite, generally favourable price

developments for most exported marine products.⁷¹ (Table 3.7.) Deterioration of profitability in the fish processing industry in recent years was also caused by higher wet fish prices and contraction in the amount of fish landed for processing.⁷²

3.3.8. Foreign Investment Regulations

Despite the current legislation⁷³ on foreign investment⁷⁴ in Iceland, which removed most of the previous restrictions, special reservations are still made for the fishing industry, preventing all direct or indirect investment by non-residents⁷⁵ in enterprises conducting fish operations or dealing with fish processing. However, in the context of the law, fish processing does not include retail packaging or further processes designed to better prepare products for distribution, consumption, or cooking.

3.3.9. Import Tariffs in the Export Markets

Import tariffs and quotas on various marine products in some of the export markets has arguably shaped the Icelandic fishing industry through the years. The main tariff barriers for Icelandic marine products have remained in the EEC market,⁷⁶ especially for products like fresh fillets and salted fish. The benefits gained from the trade agreement between Iceland and the EEC in 1972⁷⁷ became in recent years increasingly diluted.⁷⁸ The first reason to this was the tariff reductions specified in the agreement were restricted to only certain custom tariff numbers. When countries like Spain and Portugal, the main markets for salted groundfish, joined the EEC, important markets moved under the tariff barricades of the EEC regime, and simultaneously the EEC cancelled its unilateral but uncommitted abolition of import tariffs for certain Icelandic marine products, which it had announced in 1971. Secondly, an improved transportation technology and an increased export of products which were not enjoying the tariff reductions stipulated in Protocol 6, have made the tariff barriers in the EEC market more significant in economic terms. With the

agreement between the EFTA countries and the EEC which stipulates the creation of the EEA (European Economic Area)⁷⁹ and a special clause in that agreement (Protocol 9), the import tariffs on most marine products currently exported from Iceland to the EEC will be reduced by stages over a 4 years period. In the cases of some product categories the tariffs are abolished in full from the time the agreement is in effect but in other cases no tariff reductions are made. (Appendix 3.4.). Import tariffs for Icelandic marine products into the U.S. and the Japanese markets have so far remained less significant economically than those in the EEC market. For whole-frozen Greenland halibut, whole-frozen redfish and frozen capelin roe, the principal marine products currently exported from Iceland to Japan, the current import tariffs are around 5-6 per cent and for frozen shrimp around 3 per cent. In the U.S. market no import tariffs exists for the main frozen marine products currently exported from Iceland to the U.S., but for various prepared or preserved products, such as in airtight containers, the import tariffs generally range from 6-10 per cent.

3.3.10. Subsidies to Foreign Competitors

Many of Iceland's competing nations in the export markets for marine products, grant considerable amounts of money in the form of subsidies to their domestic fishing industry. In Norway,⁸⁰ Faroe Islands, Greenland and Canada various subsidies are granted to the fishing industry in these countries, usually either in the form of investment subsidies or extra payments on export prices.⁸¹ The EEC provides substantial amounts in the form of subsidies to firms within the Community, both in the fishery and fish processing sectors.⁸²

3.4. The Fishery Sector

This section which is divided into five sub-sections outlines the main characteristics of the Fishery Sector.

3.4.1. Development of the Fishery Sector⁸³

The Icelandic fisheries were of traditional form until the beginning of the 19th century, and primarily operated as a supplement to farming. Almost all fisheries were carried out by using open rowing boats, which were mainly operated by their owners and on a seasonal basis. The advent of the first decked sailing smacks in the first decade of the 19th century, operated by Icelandic merchants, marked the beginning of a new era in Icelandic fisheries, because by that time commercial fisheries had started.

"The smacks were mainly operated from rapidly emerging fishing villages which provide sheltered anchorages while the rowing boats represented the traditional declining element of the fishery, the part-time occupation by coastal farmers and crofters in small fishing villages."⁸⁴

But even though the decked sailing smacks marked the beginning of a new era, the rowing boats represented the biggest share of the cod catch throughout the 19th century. The use of sailing smacks, however, enhanced the possibility to exploit more distant fishing grounds and to extend the fishing season, which, when using the rowing boats, was very much limited to the spring and summer seasons. The usage of decked sailing smacks also brought in new technology. When the small rowing boats were chiefly using handline as a fishing gear, the sailing smacks were also employing long lines and gill-nets. The number of decked sailing smacks increased considerably during the last two decades of the 19th century and the first 6 years of the 20th century. These changes in fishing technology and composition of the fishing fleet, combined with greatly improved market opportunities abroad, paved the way for the fisheries to become an independent industry, especially in those parts of the country which were close to good fishing grounds. Furthermore, the fishing

industry established itself during this time as the chief export industry, representing about 65 per cent of total exports at 1906. The next phase in Icelandic fisheries was the mechanization of the fishing fleet. The introduction of steam trawlers and motor boats into Icelandic fisheries were, like many other innovations, brought to Iceland by foreign fishermen who were exploiting Icelandic waters in increased numbers in the late 19th century. Mechanisation of the fishing fleet and adoption of new fishing gears (the bottom trawl, Danish seine and gill-nets) in the first decades of the 20th century were the major factors behind a great increase in demersal fisheries and later of herring fisheries by the Icelanders. The number of motor vessels and trawlers (later stern-trawlers) showed a large increase during the first decades of the 20th century, and after the World War II. During the period up to 1990 the increase in number of motor vessels and trawlers continued.

Three major investments periods can be discerned⁸⁵ in the fishing industry, and the pattern of investment has changed considerably, due to more diverse catches of species and changes in the processing and exporting sectors. One of the main characteristics of development in fisheries during the 20th century has been the increased diversification in number of species exploited. The main species exploited during most of the 19th century was cod but some other demersal species like haddock were also utilised. In the 1920s saithe became an important commercial species as did redfish in the 1940s. The catch of capelin started as an important part of fisheries in 1965 and has since been a vital part of the catch for the fisheries sector, except that in the years 1982 and 1983 there was a sharp fall in the capelin catch. Shrimps were first exploited in the 1930s but on a very small scale and it was first in the 1960s that shrimps became an important commercial species. Lobsters were first exploited in large quantities in the last years of the 1950s and reached their peak in 1963 when the total catch was around six thousand tonnes but after that the catch dwindled and since 1970 has been around 2,000 - 2,500 tonnes. Scallops were first

exploited in Iceland in 1969. The quantity of scallops caught increased from 2,400 tonnes in 1970 to just over 17,000 tonnes in 1985 but after that the quantity decreased to around average of 11,000 tonnes in the years 1988-1990. Greenland halibut was first exploited by the Icelanders in the 1970s but other nations had started to exploit it in Icelandic waters some years earlier. Shark fishing was an important industry during the mid 19th century in some parts of the country. In the last decades of the 19th century herring fishing began in Iceland by Norwegian fishermen but was soon also adopted by Icelandic fishermen. In the 20th century there have been two main periods of herring fishing in Iceland. The former lasted during the years from 1936 to 1944 and the latter the from 1961 to 1967. During the last two decades of the 19th century the Norwegians started to exploit large stocks of whales in the sea around Iceland, but, as a result of depletion of the whale stocks during the second decade of the 20th century, the killing of whales was banned. From 1948 to 1986 all commercial killings of whales in Icelandic waters were operated by a single Icelandic company. In 1986 all commercial killings of whales in Icelandic waters ceased, but in conformity with the resolution by the International Whaling Commission some scientific hunting of whales took place during the period 1987-1989.

3.4.2. Firms' Size and Ownership

Most of the firms in the fishery sector are privately owned and relatively small in terms of number of employees. As illustrated in Table 3.1. nearly 63 per cent of all firms in the fishery sector employ two man years or less and about 96 per cent of all firms employ twenty man years or less.

Table 3.1.**The size distribution of firms in the fishery sector
by number of man years employed 1987 ¹⁾**

Number of employees	Number of firms	Percent of total firms	Percentage aggregate
0 - 1	569	40.8	40.8
1 - 2	310	22.2	63.0
2 - 5	207	14.8	77.8
5 - 10	138	9.9	87.7
10 - 20	111	8.0	95.7
20 - 30	32	2.3	98.0
30 - 40	10	0.7	98.7
40 - 60	10	0.7	99.4
60 - <	9	0.6	100.0

1) The number of employees is based on information about the number man years worked in each company. One man year is equivalent to 52 working weeks. This means that a person who is working full-time for 52 weeks would be counted as one man year, and 2 persons who are working for 26 weeks each, would be combined counted as one man year.

Source

Sjávarútvegur 1986-1987

This relatively large number of very small firms in the fishery sector derives from the fact that many of the firms in the sector were initially established in the early part of this century by successful fishermen who often invested their earnings in fishing vessels and subsequently invested in processing facilities. Many of these firms were therefore, family owned, and commonly the owners established separate firms for each individual operation, i.e. each vessel and processing plant. This means that it is difficult to determine the exact structure and the extent of vertical integration in the fishing industry i.e. the corporate links between individual vessels and processing plants. However, vertical integration mainly exists in the fishery and processing of demersal species, crustaceans and shellfish but the integration is much less evident in pelagic fisheries. Most of the privately owned firms are organized as limited liability companies and the co-operative movement which has a major presence in the Icelandic fishing industry has also chosen this form of ownership. Municipal and



State ownership in the fishing industry has usually been relatively small, but a series of financial strains and bankruptcies in the industry during the last few years has led to an increasing ownership participation of municipalities in the industry.⁸⁶ The key role which many fishing and processing firms have as the chief creators of employment in the several small fishing towns where these firms are located has forced the municipalities and the State to increase their stake of ownership in these companies, under the policy of social responsibility.

3.4.3. The Fishing Fleet

Since the end of World War II, there has been a significant increase in the tonnage size of the Icelandic fishing fleet, and the capital value increase has been even greater due to technological improvements aboard the fishing vessels.⁸⁷ Waves of investment in new fishing vessels or in technological improvements aboard the fishing vessels have usually been the result of structural changes in fisheries, such as the exploitation of new fishing grounds, the utilization of new species or as a result of some government intervention policy, aimed at boosting investment. An example of such a government policy was at the beginning of the seventies when there was a boom in the investment of deep-sea stern-trawlers as a result of very favourable terms on capital invested in the fishing industry, offered by the government. In the period between 1970 and 1975 the number of trawlers in the size category 0-500 gross registered tonnage (GRT) increased from 3 to 42 and the total tonnage size increased sixteen-fold. An important argument made by politicians and people in the fishing industry during the seventies and eighties, in support of this massive investment in stern-trawlers, was related to the contemporary large investment in processing plants and land-freezing facilities. This they claimed would smooth out some seasonal fluctuations in fish supply, and consequently facilitate more continuous production in the processing plants, and also make quality improvements

of the raw- material. The fisheries management system introduced at 1984 and in effect until 1991, had some major impacts on changing the structure of the fishing fleet and led to a big increase in the total size of the fleet, contrary to one of its initial goals.⁸⁸ Because of some loopholes in the system⁸⁹ the number of small fishing boats increased from 250 boats at the end of 1985 of a total size of around 2000 tonnage, to 445 boats at the end of 1990 of a total size of around 3600 tonnage. (Appendix 3.5.) During the period from 1984 to 1991 the share of these boats in the total allowable catch (the distributed quota) increased from around 3 - 4 per cent to just under 15 per cent, respectively.⁹⁰ In tonnage size the total fishing fleet grew in size from 110,619 GRT at 1985 to 120,156 GRT at the end of 1990. The effective fishing fleet, e.g. vessels which are actively fishing is however, estimated to be considerably less in size than the registered fleet.⁹¹ In addition to the sharp increase in the number and size of fishing boats less than 12 GRT, there was a considerable increase in the number and total size of fishing boats in the size group 201 - < GRT and trawlers 500 - < GRT. This investment has mainly been in specialized shrimp trawlers and in freezer-trawlers. At the end of 1991 the number of freezer-trawlers with processing facilities on board was about 30 trawlers, accounting for about 20-25 per cent share of the total catch of demersal species.

The capelin fishing fleet consists of about 40-50 vessels (purse seiners) with a capacity ranging from 400 GRT to 1400 GRT with the average being around 800 tonnes. These fishing vessels are usually either privately owned or owned by Limited Companies. During the last few years there has been a tendency of individual factories buying fishing vessels to secure the supply of raw material and it is estimated that about 30 per cent of the fleet is connected to factories in this way.⁹² As the total GRT size of the fishing fleet increased in the 1990s, significant changes occurred in the spatial distribution of the fishing fleet. As indicated in Table 3.2. the most apparent change is the relative decrease in share by the South region from about

18.5 per cent at 1980 to just over 13.5 per cent at 1990 and by the South-West region which also lost a notable share of its fishing fleet in relative terms, especially between 1985 and 1990. This relative decrease in the South and South-West regions was off set by a major increase in both the North regions. No studies have specifically been undertaken to analyse the factors which caused these significant changes in the distribution of the fishing fleet, but the quota system introduced in 1984 is definitely an important explanatory variable.

Table 3.2.

Fishing Fleet by Regions
(Percentage distribution by tonnage)

Region	1980	1985	1990
South	18.57	12.60	13.58
South West 1)		36.10	29.36
West 1)	43.25	9.88	8.39
Westfjord	10.24	9.16	10.04
North West	3.77	5.40	6.92
North East	11.87	14.25	19.42
East	11.73	12.62	12.30
Total	100.00	100.00	100.00

1) In 1980, 43.25 per cent of the fishing fleet was in the combined region of the South West and the West.

Source

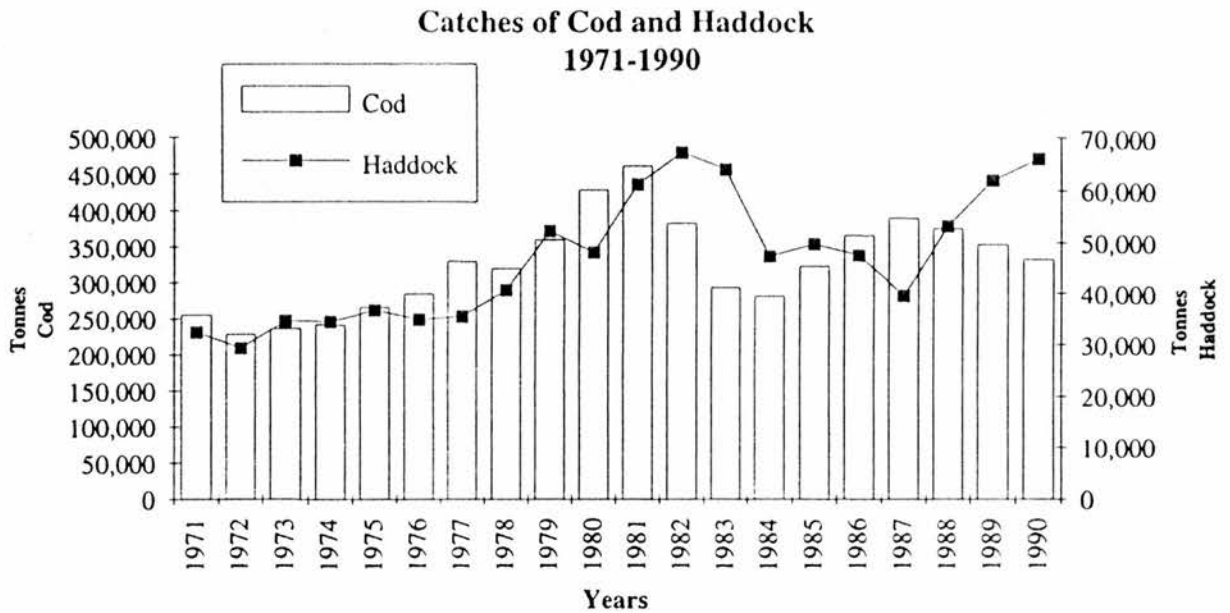
Útvegur, 1980,1985,1990

3.4.4. Catches

As indicated in Figure 3.1. there was a significant increase in the total catch of the main demersal species cod and haddock after Iceland extended its fisheries jurisdiction to 50 and then 200 miles in 1972 and 1975. The big increase in fisheries and the utilization of new species such as redfish, Greenland-halibut and capelin are the main factors behind the big increase in the total fish catch in Iceland during the seventies and eighties. The increase in fisheries of shrimps and scallops was also

significant, and in 1987 the total catch of shrimps reached nearly 39,000 tonnes, or more than six-fold the catch of what it was in the beginning of the 'seventies. (Appendix 3.6) Despite various measures to prevent over-fishing and to preserve the stock of cod, the spawning and fishable stocks have deteriorated significantly in the 'eighties and 'nineties. As shown in Figure 3.2., the total catch of cod increased considerably during the 1970s, but fell after that quite dramatically in the early 1980s. After some recovery in the mid 1980s it decreased significantly again in the beginning of the 1990s. The catch of haddock improved dramatically in the late 'eighties and in the beginning of the 'nineties, and has reached double of what it was during most of the 'seventies. About 50 per cent of the total catch of cod and haddock is caught by trawlers and the rest by other fishing vessels and boats. Bottom trawl is the main fishing gear for the cod and haddock fisheries, usually taking between 50 and 60 per cent of the total catch of cod and around 70 per cent of total catch of haddock. The relative use of gillnets, which is the second most important fishing gear in cod, and the third most important in haddock fisheries, has decreased significantly in recent years and was at 1990 taking about 20 per cent of the total cod catch and only 8 per cent of the total catch of haddock. On the other hand, there has been a significant increase in the use of longline and handline in both cod and haddock fisheries. This switch in use of fishing gears from gillnets to the use of longline and handline derives mainly from: first, structural changes which have taken place in the fishing fleet, where the number of boats less than 10 GRT boomed in the late 'eighties; second, special provisions about longline fisheries during the months January, February, November and December each year, where only 50 per cent of total catch taken by longline during these months, is included in the individual quota distributed to each vessel; third, more emphasis put on quality of the fish which is landed after quantity restrictions were made by the introduction of the quota system.

Figure 3.2.



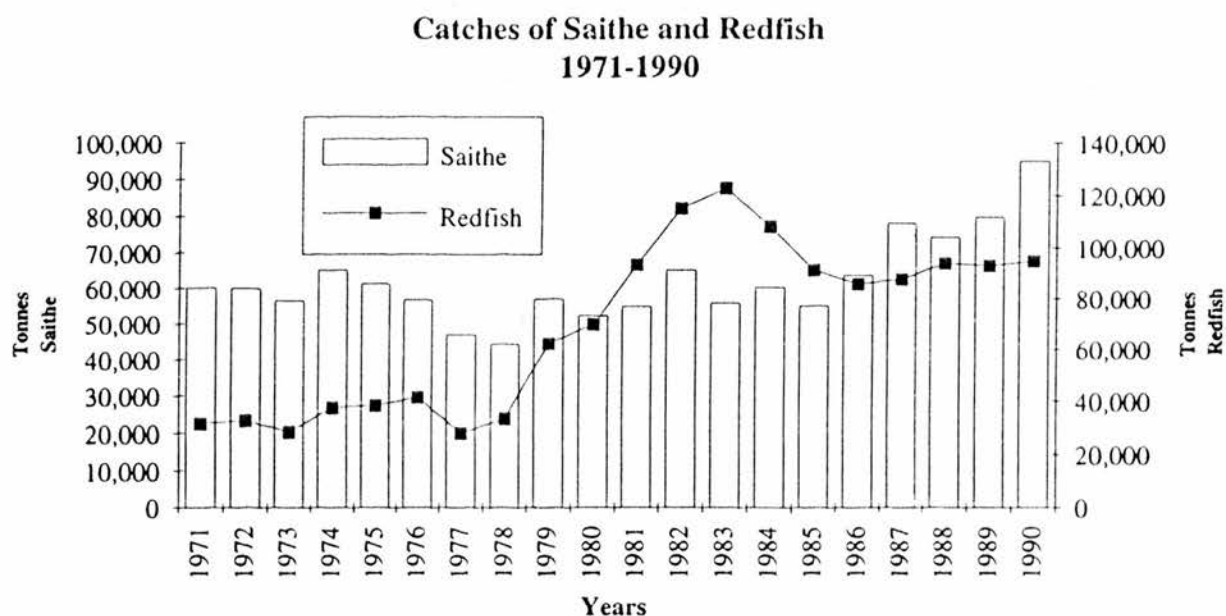
Source

Úvegur, various issues, Fiskifélag Íslands.

The significant increase in the catch of redfish, especially during the 'eighties, is nearly all accounted for by the deep-sea trawlers. (Figure 3.3.) About, 90-95 per cent of the redfish catch is taken by trawlers and about 95 per cent of the catch is caught in a bottom trawl. Since 1989 an increasing number of Icelandic deep-sea trawlers have exploited the stock of beaked redfish (*Sebastes mentella*) outside Iceland's fisheries jurisdiction in the open seas area south-west of Iceland, exempted from all quota restrictions. In 1989 about 1.5 per cent of the total redfish catch was taken in open seas but, at 1990 the corresponding ratio was just over 4 per cent. The annual catch of saithe remained relatively stable during the 'seventies and early 'eighties, around 50-60 thousand tonnes, but since 1987 it has increased considerably to around 90-100 thousand tonnes per year. (Figure 3.3.) About 60-65 per cent of the total catch of saithe is taken by trawlers, and bottom trawl is the main fishing gear, accounting for about 75-80 per cent of the total catch of saithe. The use of gillnets

has shown a strong decline in saithe fisheries in recent years. In the beginning of the 'nineties, gillnets account for about 15-20 per cent of the total saithe catch, compared to around 30-40 per cent in the 'eighties. The use of handline has, on the other hand, shown a substantial increase in saithe fisheries, accounting for just over 3 per cent of the total saithe catch in 1990.

Figure 3.3.



Source

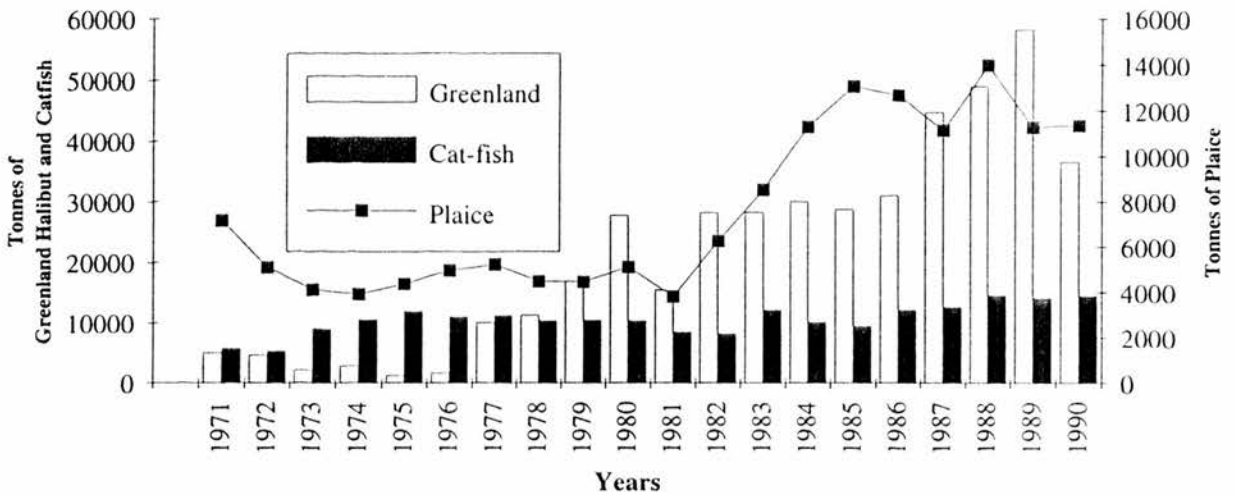
Úvegur, various issues, Fiskifélag Íslands.

The increased catch of Greenland halibut in the late 'seventies and during the 'eighties is one of the most pronounced changes in the Icelandic fisheries in recent years. (Figure 3.4.) However, the explosion in the catch of Greenland halibut led to an over-exploit of its stock and during the 'nineties the TAC has been cut down immensely to thirty thousand tonnes for the fishing year 1992/1993. About 90-95 per cent of the catch of Greenland halibut is taken by trawlers, and about 98 per cent is caught in a bottom trawl. As illustrated in Figure 3.4., plaice showed a major

increases in catch during the 'eighties. About 80-85 per cent of the catch of plaice is taken by boats. The main fishing gear for plaice fisheries is Danish seine and bottom trawl, accounting for 90-95 per cent of the total catch of plaice. The catch of catfish showed a moderate increase during the 'seventies and 'eighties and currently the total catch is around 14,000 tonnes. The principal fishing gear in catfish fisheries is longline, accounting for about 60 per cent of the total catch and bottom trawl, accounting for about 30 per cent of the total catch of catfish. The share of catfish taken by trawlers has in recent years been around 25-30 per cent, and by vessels and boats, around 70-75 per cent.

Figure 3.4.

Catches of Greenland Halibut, Catfish and Plaice, 1971 - 1990



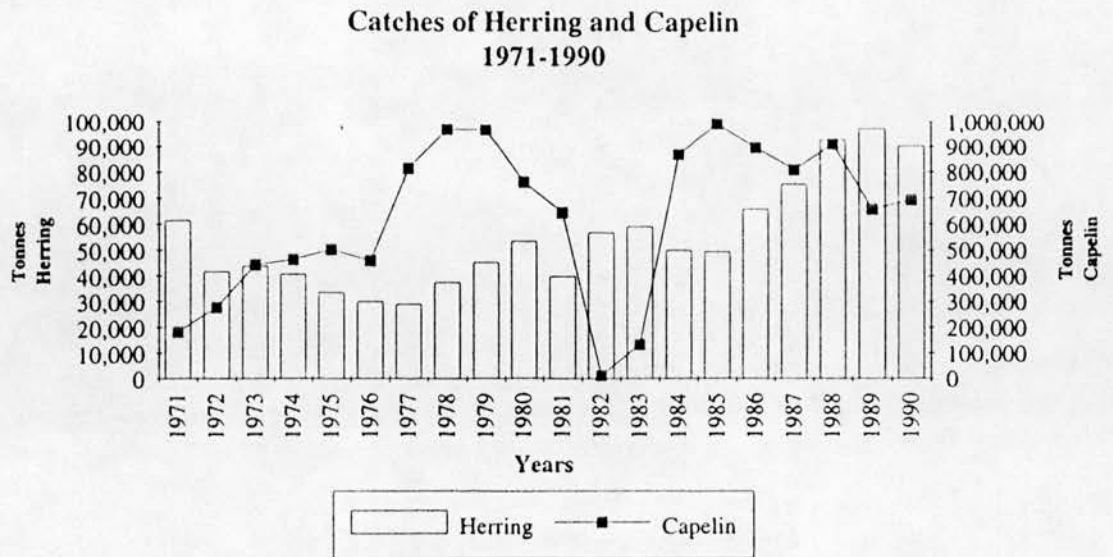
Source

Úvegur, various issues, Fiskifélag Íslands.

Capelin fisheries first became of economic significance in the beginning of the 1970s. As is illustrated in Figure 3.5., the capelin fisheries have been subject to drastic fluctuations. During the period from 1979-1981 there was a sharp fall in the

capelin catch, and in 1982 and 1983 the capelin fisheries collapsed. In 1984 and 1985 there was a quick recovery in the capelin fisheries and the total catch of capelin reached its peak in 1985. In 1991 there was a second sharp fall in the capelin fisheries in Iceland and the total capelin catch went down to around 250,000 tonnes. Most of the capelin catch is taken by specialized vessels, usually over 200 GRT, and the dominant fishing gear accounting for nearly all the catches is purse seine. After the stocks of herring in Icelandic waters collapsed as a result of overfishing in the late 'sixties, a total ban was imposed in 1972 on the use of all fishing gear for the catching of herring in Icelandic waters, except for the use of driftnets. These restrictions which were equivalent to a total ban on herring catching remained until 1975.⁹³ The catch of herring has gradually improved since the late 'seventies and during the last 3 to 4 years the total catch has been around 100,000 tonnes. (Figure 3.5.) Herring purse seine has now become the main fishing gear, accounting for nearly all the catch of herring in 1990, and virtually all the catch is taken by boats. Since the herring fisheries resumed in the late seventies they have been restricted to the summer spawning stock, with the catching season usually remaining during the autumn months every year. All the catch of herring is regulated by a TAC quota which is then divided into ITQ for vessels.

Figure 3.5.



Source

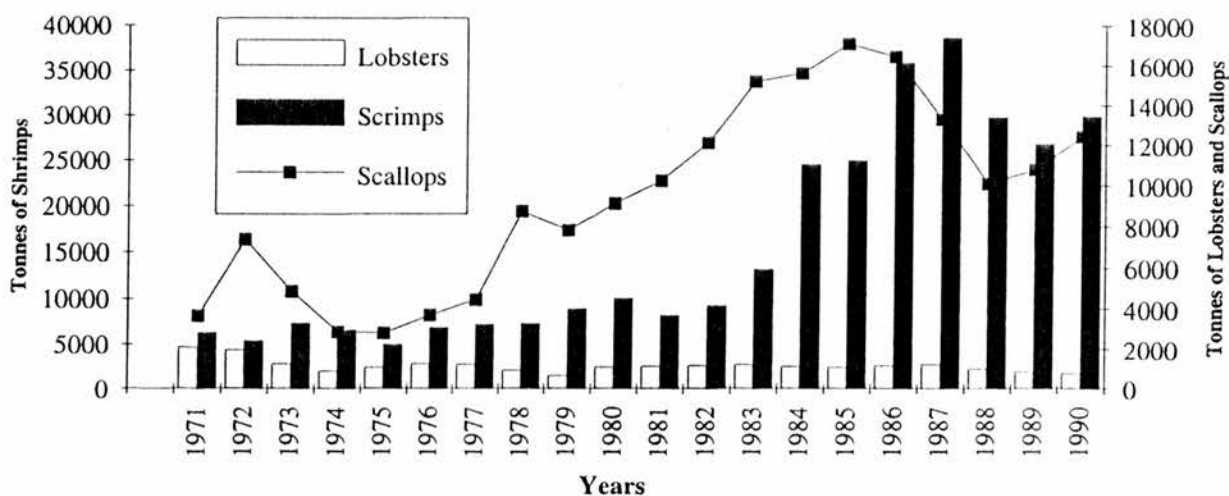
Úvegur, various issues, Fiskifélag Íslands.

The annual catch of shrimps increased very fast during the late 'seventies and the 'eighties. (Figure 3.6.) This increase was mainly due to the exploration and exploitation of new off-shore fishing grounds in the mid 'seventies, but prior to that, inshore fisheries were the mainstay of shrimps fisheries in Iceland. Since 1986, on average around 85 per cent of the total catch of shrimps has been caught in off-shore areas. The inshore shrimps are mainly caught by small boats between 10-30 GRT, but the off-shore shrimps are mainly taken by bigger vessels and specialized shrimp trawlers where the shrimp are peeled and frozen onboard. The principal fishing gear in shrimp fisheries is a special shrimp trawl accounting for virtually the whole amount of the shrimp catch. Commercial fisheries of lobster, the other main crustacean species in Iceland, started during the late 'fifties and increased quite significantly during the early 'sixties when the total annual catch reached an amount of just over 6,000 tonnes but in the following years it declined substantially because of overfishing.⁹⁴ During the 'seventies and the 'eighties the average annual catch of

lobsters was around 2,500 tonnes. From 1988 to 1990 the catch of lobsters declined markedly and was only 1,700 tonnes in 1990 but, recovered in 1991 to just over 2,000 tonnes. The majority of the catch of lobsters is taken by relatively small vessels and the main fishing gear is the lobster trawl, accounting for nearly all the catch. Both the shrimp and lobster fisheries are regulated by a TAC quota which is then divided into ITQ on a vessel basis, but the catch of inshore shrimps and lobster is also limited to certain seasons within each year. The scallop fisheries started in Iceland at 1969.⁹⁵ During the 'seventies and the 'eighties the annual catch of scallops increased substantially and reached a peak of 17,000 tonnes in 1985. Since 1985 the fishable stock of scallops has dwindled and the catch has declined and was just over 11,000 tonnes at 1991. The scallops fisheries are, like the crustaceans fisheries subject to a TAC quota which is then allocated to vessels, but, most of the scallops catch is taken by relatively small vessels. Virtually all the catch is taken by a special fishing gear: the scallop-plough.

Figure 3.6.

**Catches of Lobsters, Shrimps,
and Scallops, 1971 - 1990**



Source

Úvegur, various issues, Fiskifélag Íslands.

3.4.5. Seasonal Catches and Landings

Iceland is practically surrounded by good demersal fishing grounds along its whole coastline. The ocean area to the south, south-west and west coast of the country are the chief spawning grounds for most of the demersal species, although species like redfish and Greenland-halibut are spawning in much deeper waters than most of the other demersal species. Demersal catches in Iceland can be separated into two different fisheries, both in time and space:⁹⁶ First, the spawning fishery which takes place between January and May in the south-west costal waters and, the non-spawning fishery which takes place at feeding and nursery grounds all around the country, especially to the north-west of the country. The increasingly important deep-sea trawler fleet, which currently takes about 60 per cent of the total demersal catch, is for reasons of conservation of the fishing stocks and protection of regional fisheries⁹⁷ excluded from the main demersal spawning areas. The main fishing grounds for deep-sea trawlers are the area north-west and to the west of Westfjord, but also in the deep-sea waters south, south-east and west of the country. The catches of most demersal species are usually quite evenly distributed over the year. The Greenland halibut is, though, an exception with the bulk of its catch usually taking place during the period from April to June. (Appendix 3.7.)

Pelagic fisheries i.e. of capelin and herring are very restricted by seasons and to areas. The main spawning grounds of the summer-spawning herring on which all herring fisheries in Iceland have been based since the early 'seventies, are mainly in the area to the south and west of the country. After spawning, usually in the early part of August she migrates to the waters both west and east of the country. During the autumn season, about two to three months after the spawning, the herring fisheries take place at the ocean area from east to the south-west of the country. Capelin is another pelagic species which is combined in seasonal and regional fisheries. Spawning usually takes place in March and early April each year in the

ocean area which spans from the south-east to the west of the country. After spawning, most of the capelin dies but the year-class which spawn in the subsequent spring is feeding in the sea north west and north of Iceland, where she mixes with younger capelin which is becoming a new spawning stock. The capelin fisheries in Iceland are based on this younger capelin which is usually aged 2-3 years. The capelin fisheries normally start in the autumn when the shoals are usually found north and north-east of Iceland. In January, migration to the spawning grounds usually commences and the shoals move from the north along the east coast and to the spawning grounds at the south. Valuation of the capelin depends on her fat content but it is usually at its highest level at the end of the feeding season in the late autumn or around New Year and then decreases quite rapidly as she approaches the spawning grounds.

The main fishing grounds for off-shore shrimps are in the deep-sea waters north and north-west of Iceland. The off-shore shrimps fisheries are operated the whole year around, but usually the best catching season is during the summer months. The seasonal fisheries of inshore shrimps, which mainly takes place at bays and fjords at the west and north-west of Iceland, are regulated by the Ministry of Fisheries. Inshore shrimps fisheries are usually restricted to the winter season i.e. from October to May, except for fishing grounds which are south-west of Iceland, but there the fishing season is from the beginning of May until the end of August. Lobsters fisheries in Iceland are restricted to the summer season by regulations set by the Ministry of Fisheries. The main fishing grounds are in the waters south and south-east of the country. The main fishing grounds for scallops are in the inshore areas west and north-west of the country. Most of the catch usually takes place in the period from the end of July until the beginning of March, but the spawning period for scallops is in June and July.

3.4.6. Landings by Regions

Spatial distribution of the catch by species partially reflects the closeness of the corresponding region to the main fishing grounds of each species. This is apparent for the landings of capelin, where the freshness of the catch of capelin (raw material) is a crucial factor in the production of quality fish meal from the raw material.⁹⁸ Most of the capelin catch is, therefore, landed and processed in ports which are close to the main fishing grounds in the North-East, East and South regions of Iceland. Similar patterns exist for the landings of herring, but about 55 per cent of the catch of herring is landed in ports in the East and about 35 per cent is landed in ports in the South and South West regions. The landings of lobsters and scallops are, like the pelagic species, very restricted to certain regions. Virtually all the catch of lobsters is landed in ports in only three regions and 75 per cent of the catch of scallops is landed in the West region. About one quarter of the demersal catch is landed in the South West region. The South West region is close to some of the most prolific demersal fishing grounds and the capital Reykjavík, with one of the main export harbours and the only international commercial and financial centre in Iceland, is located in the region. The share of fish landed in foreign ports showed a dramatic increase during the period from 1986-1990. Since 1990 the share of foreign ports has contracted as a result of the increased number of fish auction markets in Iceland. In 1990 about 30 per cent of the catch of haddock and redfish was landed in foreign ports and 12-14 per cent of other demersal species. About 60-70 per cent of the redfish which is landed in foreign ports is actually landed there directly from the vessels but about 30-40 per cent is exported from Iceland in containers and auctioned at foreign markets. In contrast about 80 per cent of the haddock landed in foreign ports is landed there in containers and only about 20 per cent directly from the vessels. However, examination of fish landings statistics based on volume requires some careful interpretation, as the relative volume and value of different species in the total fish

catch is very diverse,⁹⁹ and volume figures are not a good indicator of the relative importance different regions and different fisheries have for the fishing industry and the Icelandic economy. To examine how fish landings have developed by regions in terms of value and volume during the eighties, a new term Fish Region Index (F.R.I.) is introduced and constructed. The F.R.I. shows the ratio between the percentage share of fish by value landed in a region and the percentage share of fish by volume landed in a region. A higher F.R.I. ratio in one region compared to another region either indicates, that some more valuable species have been landed in that particular region, or that higher prices had been obtained. F.R.I.s for the years 1980, 1985 and 1990 are illustrated in Table 3.3.. The increase in the F.R.I. for the South West region and the absolute decrease for the South region and the East region are very apparent. The main factors explaining these changes are, first, the relative changes which have occurred in the composition of species landed by regions¹⁰⁰ where a significantly less proportion of the more valuable species like cod and haddock has been landed in the South and East regions. Second, a higher proportion of the fish landed in the South West region was sold at the fish auction markets,¹⁰¹ where prices were on the average marginally higher than in other parts of the country, due to more competition for the raw-material.

Table 3.3.

Fish Region Indices

Regions	1980	1985	1990
South	0.853	0.848	0.618
South West	0.924	1.194	1.387
West	1.091	1.392	0.983
Westfjord	1.253	1.533	1.194
North West	0.700	0.776	0.886
North East	0.729	0.903	0.927
East	0.769	0.517	0.336
Foreign Ports	3.860	2.405	2.742

Source

Calculated from Útvegur

3.5. The Fish Processing Sector

The importance of the fish processing sector for an industry and an economy like the Icelandic one, which bases its existence on exporting is seemingly much more than for those which dispose most of their catch on the home market.¹⁰² One of the main characteristics of the fish processing sector is the unpredictability and discontinuous supply of raw material by quantity, quality and species composition.¹⁰³ Different methods have been devised to process fish, and various innovations have improved the existing processing methods throughout the history of commercial fisheries.¹⁰⁴ Young described the function of the fish processing firms as multifaceted, which included: reducing perishability to extend shelf-life and distribution channels; reducing raw material weights as a means to lower unit transport costs; adding value; generating income and employment multiplier effects and, of the utmost importance, the transforming of raw materials into products satisfying consumer wants for food.¹⁰⁵ A number of related factors usually determine the choice of a processing method, such as: catching and handling methods onboard the trawlers; production capacity; market demand;¹⁰⁶ quality of the fish landed; category and cost of raw material; work force availability and labour cost; sales prices; prices of by-products; packaging cost; inventory cost; and processing time.¹⁰⁷

3.5.1. Development of the Fish Processing Sector

In the early centuries most of the catch, which nearly entirely consisted of cod, was dried (stockfish) but in the 19th century saltfish production started to emerge and remained the chief processing method for all demersal species until the 1930s. The drying method did, however, gain a new life in the 1950s and showed some increase until the mid 'sixties, even though it tended to fluctuate by years. The changes in processing and preserving methods from drying to salting coincided with previously

mentioned changes in the fishing fleet and the establishment of export markets in the Mediterranean countries. During the first three decades of the 20th century about 80-90 per cent of all demersal species caught went into salting and between 1920 and 1930 saltfish exports represented nearly 60 per cent of the total export income in Iceland. The Mediterranean markets however closed more or less during the 1930s until the end of World War II when exports to the Mediterranean countries took place again. In the 1950s it was further triggered when the British imposed a landing ban on iced-fish from Icelandic trawlers which meant that the British market for fish on ice was closed. From 1950 to 1990 between 20-30 per cent of the total groundfish catch has been disposed into salting, and the principal markets have been in southern Europe, especially Spain, Portugal, Italy and Greece. The emergence of the fish freezing industry in the early 1930s marked the beginning of a new era for the Icelandic fishing industry. In a very few years there was a change in processing methods from salting as the dominant method of preserving to freezing.

"The freezing development led to a complete change of export markets from low income developing countries, such as Spain and Portugal to high income industrialized countries in western Europe and the US. New inland markets far from the sea were developed. The value of the fish exports grew and the export markets were much larger than before. As the final products was mainly frozen fillets, much more fish offal became available. Therefore, the fish meal plants expanded concomitantly." ¹⁰⁸

During World War II and subsequent years there was a great expansion in the freezing industry and the number of freezing plants increased from just over twenty in 1939 to nearly eighty in 1949. The share of frozen products in total fish exports consequently increased sharply, and became as previously mentioned the dominant preserving method. During the 1950s and 1960s about 50 per cent on average of the total catch of demersal species went into freezing and in the 1970s the corresponding ratio went up to 60 per cent, but declined again in the 1980s to around 55 per cent. In the 1980s, processing and freezing aboard the vessels emerged as an important

processing method and showed a major phase of expansions during the late 1980s and in the beginning of the 1990s. Around 20-25 per cent of the total demersal catch was in 1992 processed and frozen-at-sea.¹⁰⁹ Ever since the first Icelandic trawlers landed and sold their catch at the major fishing ports in Britain in the autumn of 1907,¹¹⁰ the fresh fish markets in Britain, and later in Germany after 1950, have been important export markets for Icelandic fish, especially the demersal species cod and haddock in Britain and redfish and saithe in Germany. World War II created a high demand for fish in Britain and led to a boost in exports of fish on ice to Britain. In 1940 about 56 per cent of the export value of demersal catches was iced fish. The traditional fresh fish markets for Icelandic groundfish have since 1950 been quite volatile and export of iced fish to these markets fluctuated considerably from 1950 to 1980. Not less than four times during the period from 1952-1976, the British markets were temporarily closed as a result of disputes between Iceland and Britain, following each of Iceland's extensions in the fisheries limits in 1952, 1958, 1972 and 1975. In the 1980s, as a result of the prevention of foreign deep-sea vessels and trawlers from Icelandic waters demand for iced fish grew, especially in Britain.¹¹¹ This increased demand, along with improved technology in transporting, increased the export of iced fish to these traditional markets in the U.K. and Germany, and between 1986 and 1991 this export reached its peak. The increased production of fish meal in the 1940s was mainly derived from an increased proportion of the catch of demersal species going into freezing rather than salting. From 1950 to 1966 the production of fish oil and fish meal grew very fast, and the production of fish meal from demersal species showed considerable increase during most of the period 1950-1990, although some fluctuations remained between years, due to changes in total harvesting. The main boost in production of fish meal was, however, during the period from 1960-1966 when the production of herring meal increased from just over 50,000 tonnes to about 180,000 tonnes when it reached its highest level. In 1967 the

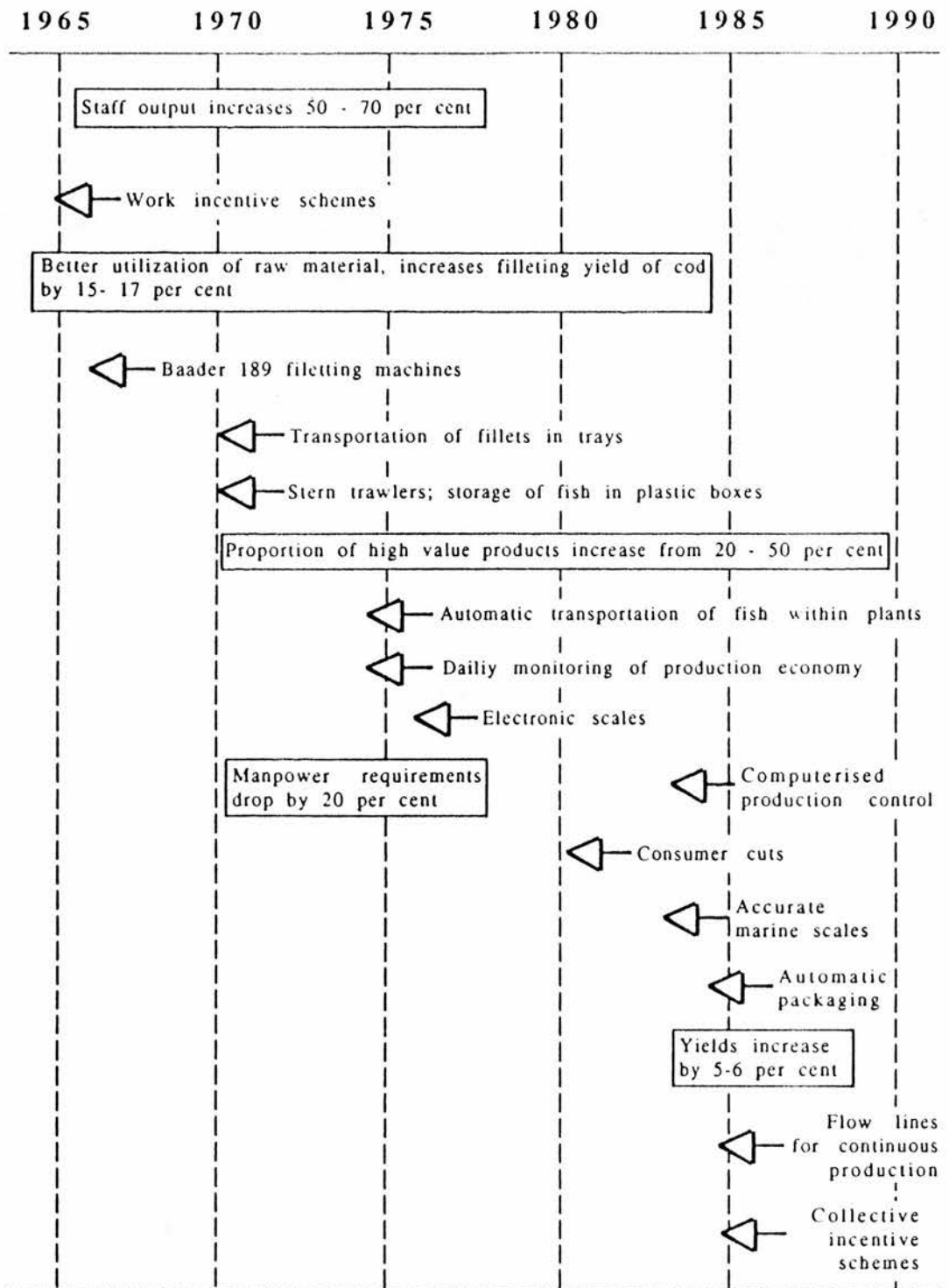
stock of herring collapsed due to over-exploitation, but in the early 1970s capelin became the main source for the fish meal industry,¹¹² and during the period from 1970 to 1979 production of capelin meal increased substantially. Since 1984, the total fish meal production has been between 150 and 200 thousand tonnes. The increased proportion of cod and redfish exported fresh or processed and frozen on board the vessels has left the production of fish meal and fish oil increasingly dependent upon the harvesting of capelin, with close to 80 per cent of the total meal production and nearly 90 per cent of the fish body oil produced from capelin.¹¹³

Although, the history of the fish canning industry in Iceland reaches back to the mid 18th century, the main growth in the fish canning industry was in the period from the late 1940s to the 1970s.¹¹⁴ Until the 1960s, most of the produce of the firms in the canning sector was sold in the domestic market, and exporting of any significance only started in the 1960s and showed its main growth in the 1970s. The main marine products of the canning factories were the produce of herring, shrimps and fish roe. In 1972 the number of canning factories in Iceland producing marine products was around 25 plants, but in the 1980s their number decreased significantly to around 15 plants in the mid 1980s, and in the early 1990s their number was less than 10 plants. Among the factors explaining the decline in number of plants and the total produce of canned products were the problems which many plants had in obtaining raw material, and in export marketing and selling in the foreign markets.¹¹⁵

The Icelandic fish processing sector has developed through a number of stages during the years. In the early 1970s the fish freezing industry in Iceland went through a comprehensive transformation and investment programme, which was aimed at increasing production capacity, upgrading production conditions and improving hygiene standards in the freezing plants as a measure to meet the potential threat of closure of the U.S. market, which at that time was the most important market for frozen fish products.¹¹⁶ More continuous supply and better quality of raw materials

for the processing firms were one of the strongest political and managerial arguments made in Iceland during the 'seventies and 'eighties in favour of the huge investment which took place at that time in deep-sea trawlers. Introduction of the quota system in the fishery sector imposed similar quantity constraints for the processing sector, and in association with increased prices for fish in international markets shifted the main focus of interest within the sector towards better utilization of the raw material¹¹⁷ and maximization of economic yield from a given quantity of raw material.¹¹⁸ The paradigm of technological development in the Icelandic freezing plants over the past 30 years is given in Figure 3.7. It can be seen that as a result of better processing equipment and improved process control, fillet yields have improved by 20-26 per cent, the productivity per employee has increased by 70-90 per cent and the proportion of high value products has increased from 20 per cent to 50 per cent.¹¹⁹

Figure 3.7.



Source: Valdimarsson, Grimur (1992) Adapted.

3.5.2. Structure of the Processing Sector

The fish processing sector is characterised by a large number of small firms which are in the business of processing fish and converting it into products of fresh, frozen, salted, dried or meal and oil. Most of the small processing firms are privately owned and typically run as a family business, employing 1-2 persons, and frequently operating only part of the year. This is clearly illustrated in Table 3.4. which shows the size distribution of firms in the fish processing sector by number of man years worked. As indicated, about 60 per cent of the registered firms employ five man years or less and around 70 per cent employ ten man years or less.

Table 3.4.

The size distribution of land based fish processing firms by number of man years employed at 1987 ¹⁾

Number of employees	Number of firms	Percent of total firms	Percentage aggregate
0 - 1	197	33.0	33.0
1 - 2	64	10.7	43.7
2 - 5	93	15.6	59.3
5 - 10	66	11.1	70.4
10 - 20	58	9.7	80.1
20 - 30	33	5.5	85.6
30 - 40	19	3.2	88.8
40 - 60	17	2.8	91.6
60 - <	50	8.4	100.0

1) The number of employees is based on information about the number man years worked in each company. One man year is equivalent to 52 working weeks. This means that a person who is working full-time for 52 weeks would be counted as one man year and 2 persons who are working for 26 weeks each, would be combined counted as one man year.

Source

Sjávarútvegur 1986-1987

Between 1980 and 1990 the number of processing firms more than doubled,¹²⁰ although an increased share of the fish catch was also being processed and frozen-at-sea. In 1980 the 30 largest firms in the fish processing sector accounted for about

49.1 per cent of the value of fish processed, but by 1990 the equivalent ratio was 41.7 per cent. (Table 3.5.) In 1980 the 100 largest firms in the processing sector accounted for about 87.7 per cent of the value of fish processed but by 1990 the equivalent ratio was 75.4 per cent. (Figure 3.8.)

Table 3.5.

**The size distribution of land based
processing firms¹ in 1980, 1985, 1990**

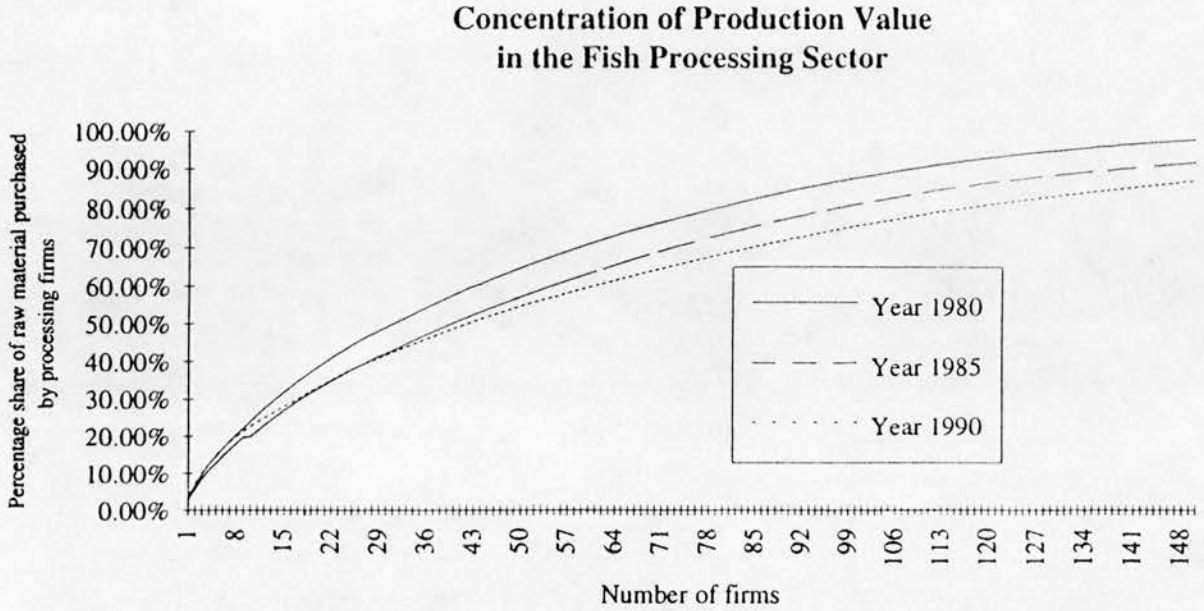
Number of largest firms	1980	1985	1990
5 largest	14.5%	12.7%	14.8%
10 largest	24.0%	19.8%	22.6%
15 largest	31.8%	27.0%	28.0%
20 largest	38.3%	32.6%	33.1%
25 largest	44.1%	37.7%	37.8%
30 largest	49.1%	42.1%	41.7%
40 largest	57.7%	50.3%	48.7%
50 largest	64.8%	57.1%	54.6%
Total number	178	297	410

1) The figures showing the size distribution of firms in the sector, are based on the value of their raw-material purchasing.

Source

Útvegur 1980, 1985, 1991, Fiskifélag Íslands

Figure 3.8.



Source

Útvegur, 1980,1985,1990

A great majority of all firms in the processing industry are in the business of primary processing i.e. they buy fish from the fish auction markets or from their own vessels, transports it to their premises where it is filleted or flatted and turned into a range of products. These include fresh fillets, individually quick frozen (IQF) fillets, frozen block, salted products, stock fish or other products which are usually sold for further processing or handling before being sold to the final consumer. In the last few years the number of firms involved in secondary processing of demersal species, i.e. firms which are in the business of making value-added products for distribution in retail and consumer packaging both under their own labels and under the labels of other firms, usually foreign retailers, has increased modestly. Most of the secondary processors are in the business of primary processing as well, and are only using a proportion of their raw material in this more advanced processing. Other firms in the processing sector involved in the making of products in consumer packages are producers of various canned products and products made from fish oil.

3.5.3. Processing Methods and Utilization of the Fish Catch

The principal methods for fish processing in Iceland have traditionally been chilling on ice, freezing, salting, drying, canning and reduction into fish meal and oil. At the beginning of the 1980s, two new methods for utilizing the fish catch became widely used. First, a new conservation and transportation technology emerged which enabled the export of unprocessed fish chilled on ice in containers. Second, an increasing amount of the demersal catch and the shrimps catch has been processed and frozen onboard the vessels. The four main categories of utilization for demersal species are frozen-on-land, frozen-at-sea, salting and chilling on ice. Research in Iceland, based on econometric analysis, has indicated that Icelandic fish processors base their production and processing decisions for demersal species importantly on the prices that exist in different export markets before making decisions about the utilization of their unprocessed groundfish supply into salting or freezing.^{121 122} Other factors, such as relative freight cost to export markets,¹²³ and existing commitment at the export markets, such as direct investment in secondary processing plants, also showed signs of influencing their decisions.¹²⁴

The pelagic species, herring and capelin, are mainly disposed into meal and oil production, but also into salting and freezing.

About 90-95 per cent of the catch of crustaceans is frozen-on-land or frozen-at-sea. The principal species utilized for production in the canning sector are: shrimps, herring, capelin and lumpfish (lumpfish roe).

3.5.3.1. Frozen-on-Land

About 35-40 per cent of the cod catch is processed and frozen-on-land. The main land frozen products are IQF, frozen blocks and increasingly, specially cut fillets in retail packages. In the 1970s, about 80 per cent of the catch of cod and haddock was processed and frozen-on-land, but after the commencement of processing and

freezing onboard the trawlers in the 1980s and 1990s, only about 40 per cent of the total catch of these species is processed and frozen-on-land. The main products of land-frozen cod and haddock are IQF, frozen blocks and specially cut fillets in retail packages. Virtually all the catch of Greenland halibut is whole-frozen, and previously nearly all the catch was frozen-on-land. Utilization of the redfish catch is currently about 50 per cent into frozen-on-land but the ratio was between 80-90 per cent during the 'seventies and early 'eighties. The principal land-frozen redfish products are frozen fillets and frozen blocks. About 50-60 per cent of catch of saithe goes into land processing and freezing with the main products being block-frozen fillets and IQF. Of the total catch of herring, about one quarter of it is processed and frozen-on-land, and the main types of products are whole-frozen and frozen fillets. Every year between 2,500-3,000 tonnes of the herring catch are whole-frozen and later cut and used for bait in longline fisheries. Previously, virtually all the catches of shrimps and lobsters were processed and frozen-on-land, but the emergence of processing and freezing-at-sea has reduced the proportion of land processed and frozen shrimps to about 60 per cent of the total catch of shrimps, but nearly all the catch of lobsters is processed and frozen-on-land. The main freezing mode for shrimps are IQF or conventional, and the main products of land frozen shrimps are cooked and peeled, cooked in the shell and raw in the shell. The principal products of land-frozen lobsters are whole IQF, or conventionally frozen whole lobsters, or lobster tails.

3.5.3.2. Frozen-at-Sea

Processing and freezing of fish at sea grew very rapidly during the 1980s and the 1990s. The growth was especially apparent for species like Greenland halibut, redfish, saithe and shrimps, but about 30-40 per cent of the catch of shrimps is currently processed and frozen-at-sea. About 15 per cent of the catch of cod,

haddock and saithe is processed and frozen-at-sea and the main products are IQF and frozen mince. About 53 per cent of the catch of Greenland halibut, and about 20 per cent of the redfish catch was in 1991, whole frozen-at-sea and exported in that form. The main products of shrimps frozen-at-sea are IQF, cooked and peeled, cooked in the shell and raw in the shell.

3.5.3.3. Drying

During the period from 1980 to 1982, the total catch of cod taken by Icelandic vessels reached its highest level ever. In these years between 15 and 22 per cent of the total catch of cod and between 20 and 28 per cent of the total catch of saithe went into drying. Since the Nigerian market, the principal market for stockfish, more or less closed at the end of 1982, a relatively very small share of the total demersal fish catch has been disposed into drying. During the years 1990 and 1991 only about 0.5 per cent of the total catch of cod was dried, and for other demersal species, it was very minimal. The main dried products are stockfish and dried cod heads.

3.5.3.4. Salting

Salting is one of the main processing methods for the demersal species cod and saithe and, before the closure of the main markets for salted herring in Eastern Europe at the end of the 1980s, about 50 per cent of the herring catch went into salting. In 1990 and 1991 only 20 per cent of the herring catch was however utilized in salting. The main products of salted herring are whole, headless and gutted, and salted fillets. About 30-40 per cent of the total catch of cod is salted and around 15-20 per cent of the saithe catch, but virtually nothing of the catch of species like haddock, redfish and Greenland halibut. The main salted products from demersal species are wet salted cod and wet salted saithe, salted cod fillets and salted saithe fillets, and salted cod roe. Among other important salted fish products is lumpfish roe.

3.5.3.5. Fish Meal and Fish Oil

The total amount of the annual fish catch in Iceland which is utilized for fish meal and fish oil production depends mainly upon the annual catch of capelin, which accounts for around 80 per cent of the total meal production and around 90 per cent of the total fish body-oil production. About 95-99 per cent of the capelin catch is used for fish meal and oil production. In recent years, production of codfish meal and redfish meal has been decreasing, due to limited catch, increased exports of fish whole-on-ice, increased processing on board freezing trawlers and improved yield in the filleting plants.¹²⁵ An increasing share of the fish meal production has in recent years been for special requirements, mainly fish feed compounders.¹²⁶ Due to the closure of the main markets in Eastern Europe for salted herring, an increasing share of the annual herring catch has since 1985 been used for meal and oil production and in 1991 nearly 56 per cent of the catch was utilized like that.

3.5.3.6. Canning and Preserving

The canning sector is different from most of the other fish processing sectors in that it is more in the business of making products which are ready for consumption, but firms in other sectors of the processing industry are more of the type which we could define as primary processors.¹²⁷ Most of the production of canned fish products is exported. The main canned fish products are shrimps, herring, lumpfish-roe, cod-roe and cod-liver. An important share of the shrimp which has been used as a raw-material for the canned shrimp products has in recent years been imported mainly from countries like Norway, Russia, the U.S. and Canada. At 1989 the total amount of imported shrimps was around 5,300 mega tons (MT) and at 1991 nearly 7,800 MT which was about 25-35 per cent of the total catch of shrimps during these years respectively.

3.5.3.7. Other Utilization

3.5.3.7.1. Domestic Consumption

Only between 1-2 per cent of the total annual fish catch in Iceland is utilized for domestic consumption. Unfortunately, the current statistics for the domestic fish market and domestic fish consumption are very limited. The principal fish species consumed domestically is haddock which is usually bought by the consumer in fresh or frozen form. An estimated 6-8 per cent of the annual catch of haddock is consumed domestically, but domestic consumption of other demersal species is very limited. Domestic consumption of pelagic species and crustaceans is also very limited, and for the pelagic species it is mainly in the form of canned products.

3.5.3.7.2. Smoking

There is very little smoking of fish and domestic consumption of smoked fish hardly exists. The only exports of smoked fish are smoked herring fillets and smoked and canned herring fillets.

3.5.4. Fish Processing by Regions

The importance of different processing methods varies greatly by regions. This is based e.g. on how close the corresponding region is to the main fishing grounds for the different species. As illustrated in Table 3.6., about 50 per cent of the saltfish production takes place in two regions i.e. the South West region and the East. Similarly, most of the dried fish production takes place in the North East and South West regions, although the North East accounts for by far the biggest share or nearly 2/3 of the total production. Another fish processing industry which is regionally based is fish reduction, but about 45 per cent of the meal and oil production is in the East part of the country and nearly 40 per cent in the other three regions i.e. the South, South West and North East. Spatial distribution of the reduction plants, and

production of fish meal and fish oil, therefore reflects the closeness to the main fishing grounds of pelagics very clearly. As indicated in Table 3.6., land-freezing is relatively important in all regions and fairly evenly spread by regions, except the North West region is well below the average during the years 1989-1991. However, it is notable that nearly 70 per cent of the fish which is processed and frozen onboard the trawlers is taken by vessels which are registered in the South West and the North East regions.

Table 3.6.

Utilization of the fish catch by processing methods and regions
Percentage average 1989 - 1991

	South	South	West	West	North	North	East	Total
	West	West	fjord	West	East	East		
Land								
Frozen	13.7	18.7	12.3	17.8	7.6	14.8	15.1	100.0
St.Dev. 89-91.	0.04	1.19	0.23	0.44	0.76	0.95	2.65	
Salted	14.1	30.4	11.9	5.5	2.8	13.6	21.7	100.0
St.Dev. 89-91.	0.34	3.55	0.85	0.17	0.13	0.20	3.20	
Dried	1.4	20.6	3.1	1.8	3.2	67.5	2.4	100.0
St.Dev. 89-91.	0.23	3.32	4.21	1.38	0.44	3.20	1.60	
Meal and								
Oil	14.6	12.0	4.1	2.2	8.2	14.1	44.8	100.0
St.Dev. 89-91.	2.76	4.55	0.61	0.16	2.32	2.94	2.50	
Frozen								
at sea	5.5	37.9	0.3	3.9	15.7	30.3	6.3	100.0
St.Dev. 89-91.	1.24	0.66	0.02	2.93	1.28	0.54	0.77	
Others	4.1	78.1	7.5	4.9	0.4	4.2	0.8	100.0
St.Dev. 89-91.	2.30	2.07	2.39	0.72	0.24	1.42	0.24	

Source

Calculated from Útvegur 1990.

3.5.5. Fish Processing by Seasons

Seasonal variations in the processing sector and utilization of the fish catch can be chiefly explained by seasonal variations in the fish catch, and secondly, by market conditions in foreign markets. The production of fish meal and fish oil is very seasonal and about 90-95 per cent of it takes place during the period from November to April each year. The production of these products is importantly dependent upon biological behaviour of the pelagic species capelin and herring i.e. when they are available for catching and their physical conditions such as fat content etc. The production of saltfish which comprises mainly the ground-fish species cod and saithe has also important seasonal characteristics, but much less now than when a bigger share of the cod and saithe catch was taken by using gillnets as a fishing gear.¹²⁸ The most suitable raw-material for saltfish production is larger-size cod which is mainly caught during the late winter and spring seasons at the spawning grounds outside the south and southwest coasts.

Utilization of the fish catch into the fresh fish markets in Europe and the U.S. is also subject to seasonal differences. A study by Kristgeirsson¹²⁹ indicated that increased supply of fresh whole cod and saithe on ice to the U.K. market could be partly explained by higher prices at the market. An increased catch of haddock and plaice is, also shown to have some positive effects on the supply of these species to the U.K. market. Elasticity of substitution, i.e. the effects of increased prices on other fish products on the supply of whole fish on ice to the U.K. market, was shown to be very weak. It was concluded by Kristgeirsson that these results could be possibly explained such that relatively much more of the supply of iced ground-fish exported to the U.K. was from individual firms in the fishery sector but not from companies which were partially integrated, in this case both in the fishery and processing sectors. For the German market, Kristgeirsson's study indicated that own-price elasticity for the principal species, i.e. redfish and saithe, was between 0.5 and 0.6

and that the supply of redfish and saithe to the fresh fish markets in Germany was not significantly related to the amount of catch of these species. On the other hand, he found some indications that firms with a partially integrated operation, i.e. operating both vessels and processing plants, might be using the fresh fish markets for redfish in Germany as alternative product markets. The processing and exporting of fresh fish fillets on ice by airplanes, where the substantial amount consists of haddock fillets, depends almost entirely upon the amount of demand at the corresponding export markets, even though supply conditions are also an important factor. In the U.S. market, which receives by far the biggest quantity, the demand for fish is usually low during the period from May to August, but then picks up slowly and is usually high from the end of October until the beginning of May. The notable reduction in exports in January is more based on limited supply of fish in Iceland than on sluggish demand for fresh fish in the U.S. market.

In canned fish production, seasonal fluctuations are mainly related to seasonal restrictions in the supply of raw material. An important share of the canned fish production is based on herring and shrimps, but catching of these species is very seasonal, which means that physical availability of the raw-material is very constrained.

3.6. The Export Sector

One definition of export is: a good or service which is produced in one country and sold to and consumed in another.¹³⁰ Buckley¹³¹ saw exporting as a launching process in deepening international commitment and the most straightforward way of selling in a foreign market. It is separated from the two other main forms of foreign market servicing, i.e. licensing and direct investment, by the location factor, in that the bulk of the value adding activities takes place in the home market.¹³² With only around 1 per cent of the fishing industry's harvest or production consumed domestically, exporting and the activity of the export sector is of absolute importance for the

Icelandic fishing industry. This section reviews the initial formation and historical development of the export sector and gives an insight into some of the more recent changes which have taken place within the sector. The important role of government interference policy in the structural formation of the export sector during the 1930s and 1940 is explored as is the establishment of the four principal and product specialised "export organisations."¹³³ The growth in exporting of marine products in the 1970s and the 1980s is described and analysis shows how some of the "big export organisations" lost a considerable share in the total exports of marine products in the 1980s. Finally, this section provides a brief overview of the main marine products exported within each of the commonly used product categories, their relative importance in the total exporting of marine products and their distribution by export markets.

3.6.1. Historical Development of the Export Sector and its Structural Formation

Between 1900 - 1930 the majority of all marine products exported from Iceland was cod, either salted or whole-on-ice. Fish liver-oil was also an important export commodity. At this time, most of the export of salted cod was sold through individual fish merchants who bought the fish from the small producers in Iceland and sold it c.i.f. to the main markets in Spain and Italy.¹³⁴ With the arrival of the Great Depression in the beginning of the 1930s, and, consequential political turmoil, severe governmental regulations restricted the imports of salted fish by Iceland to the main export markets in the Mediterranean countries. This period marked the beginning of a new era for the organization of groundfish exports from Iceland and an increased government intervention and involvement in the exporting sector of the Icelandic fishing industry. In the 1930s and 1940s the main shape of the export sector was created, by the establishment of four "sales organisations," each of these

specialised at that time in the exporting of the main product categories, i.e. frozen and salted. In the early 1970s a similar sales organisation was established in the canned sector, but in the exporting of fresh fish and fish oil and fish meal exporting has usually been more decentralised.

In 1932, the three biggest exporters of salted fish from Iceland formed a voluntary national export union, Samband íslenskra fiskframleiðenda, abbreviated S.Í.F. (Union of Icelandic Fish Producers), which was immediately granted a monopoly over all exports of flatend (splitted) and salted groundfish from Iceland. This monopoly was, however, not enacted by law but subject to a Minister's decision each year, i.e. was granted on a year to year basis by the Ministry of Foreign Affairs. This export monopoly remained largely intact, and was effectively granted to S.Í.F., until 1st of January 1993, when all exports of salted groundfish were liberalised. Although S.Í.F. retained a monopoly position in the exports of saltfish, some exceptions were made from this general rule over the years, and a limited number of other exporters occasionally received some restricted export permits, usually for the exporting of salted groundfish fillets.¹³⁵

In 1934 the Alþingi (the Icelandic Parliament) passed a law establishing Síldarútvegsnefnd (Iceland Herring Board). The initial role of Síldarútvegsnefnd was to commission and exercise an overall control on the catching, processing and export marketing of herring, but not to engage into the exporting and sales operations of the herring itself. In 1945, the role of Síldarútvegsnefnd was, however, extended and from that time it was granted a monopoly in the exporting of salted herring from Iceland. As stipulated in the Act,¹³⁶ Síldarútvegsnefnd issues permits to producers for the production of salted herring to be marketed in inland or in foreign markets with conditions which are necessary to guarantee the ideal composition of product categories based on the requirements demanded by the different markets. According to the Act, Síldarútvegsnefnd should have the initiation in searching for new markets

for salted herring, and nobody is allowed to export or sell salted herring without the permission of Síldarútvegsnefnd. An exception from this Act is exporting of salted herring in the form of canned, preserved or other consumer packages. At the end of 1993, Síldarútvegsnefnd still retained the sole right in granting export permissions to potential exporters of salted herring. Síldarútvegsnefnd is not a state owned company but a private foundation which has some of its Board members elected by Alþingi and the others appointed by the Minister of Fishery. The Board gets its revenue from a 2 per cent commission of the f.o.b. price of all exported herring and from a 5 per cent commission of all imported supplies needed for the herring production, such as barrels, etc.¹³⁷

In the late 1930s, exports of frozen fish began on a small scale and led to a gradual shift to new and more affluent export markets for fish.¹³⁸ Again, the Icelandic government played an important role in paving the way for centralisation of exporting, when a special body Fiskimálanefnd (the Fishing Industry Board), was established by law in 1934. Fiskimálanefnd had as a main role to encourage new catching and production methods in the fishing industry and to finance the search for new markets. In the early stage of the frozen fish exports it were all organised by Fiskimálanefnd, but in the early 1940s the Samband íslenskra Samvinnufélaga, abbreviated S.Í.S (Federation of Icelandic Co-operatives) and Sölumiðstöð hraðfrystihúsanna, abbreviated S.H. (The Icelandic Freezing Plants) took over most of the exports of frozen groundfish, and were initially granted the sole right in the exporting of all frozen fish from Iceland. Like S.Í.F., S.H. and S.Í.S. operated on a co-operative basis and as non-profit organisations, receiving their operating revenues from a commission, calculated as a percentage of their products' sales value. Some researchers have argued that the initial granting of export licences to these two companies in the early 1940s largely reflected the political power balance which remained between the two main political Parties at that time, and which even still

remains.¹³⁹ Anyway, this export duopoly was by and large kept solely by these two companies as far as the U.S. market was concerned until 1987,¹⁴⁰ but the U.S. market had become the single biggest market for Icelandic marine products, especially frozen groundfish fillets and frozen block, right after the World War II, and remained so until the late 1980s. For exports to Western Europe, the duopoly position held by S.H. and S.Í.S never became very effective, and other companies actively started to export to these markets during the 1960s. However, exports to countries in Eastern Europe were like the exports to the U.S. solely in the hands of S.H. and S.Í.S. until 1991, but then the markets for all Icelandic marine products had virtually closed because of economic conditions in these countries.

Exports of fish meal and fish oil did not follow the same route of development as the exports of most other marine products categories, i.e. to become organised by only one or two export companies. Despite that, government intervention has been even more visible in this part of the fishing industry than in any other parts of it. In 1928, Alþingi passed a law, establishing the fully owned state company *Síldarverksmiðjur ríkisins*, abbreviated S.R. (The Icelandic State Factories). In the wake of its establishment, the company built a number of reduction plants and soon became the biggest individual producer and exporter of fish meal and fish oil in Iceland. The exports from other producers were, however, mainly organised by foreign export agency companies. In the 1930s, domestic firms, which in most cases specialized in the exporting of fish oil and fish meal and performed their services mainly as commission firms, became more involved in the exporting process, although foreign export agents continued to be an important link in the export chain. Evidently, the organisation of fish meal and fish oil exports has remained largely unchanged since the 1930s.

Like other sub-segments of the export sector, the Icelandic State significantly influenced the development and organisation of exporting by the canning industry.

This was partly accomplished through its establishment of a canning factory, by law in 1946, and which operated until 1988,¹⁴¹ but also through its initiative in the early 1970s to form a special exports organisation in collaboration with producers of canned products Sölustofnun lagmetis, abbreviated; S.L. (Icelandic Waters). As outlined previously in this chapter, until the 1960s, firms in the canned sector had primarily focused their sales on the domestic market and exporting only started to grow during the 1960s and especially in the 1970s. S.L. was established by law¹⁴² in 1972 and had as its main objective to coordinate production and export marketing activity of canned products. It was estimated that at the time of S.L.'s foundation, about 98 per cent of all the firms exporting canned fish products from Iceland had joined the sales organisation as full members,¹⁴³ even though membership was voluntary and a majority of the board members were appointed by the government. S.L. never received a monopoly licence for the export of canned fish products, except in those cases when exporting was to countries where the State was the chief buyer.¹⁴⁴ From the initial foundation of S.L., only about 3-4 producers of canned products accounted for around 90 per cent of the total exports value. Therefore, when some of these members left S.L. in 1990 and other producers became insolvent and went out of business between 1988-1992, the organisation was decimated and ceased operations *per se* in 1992.¹⁴⁵

3.6.2. Development of and Structural Changes in the Export Sector during the 1980s

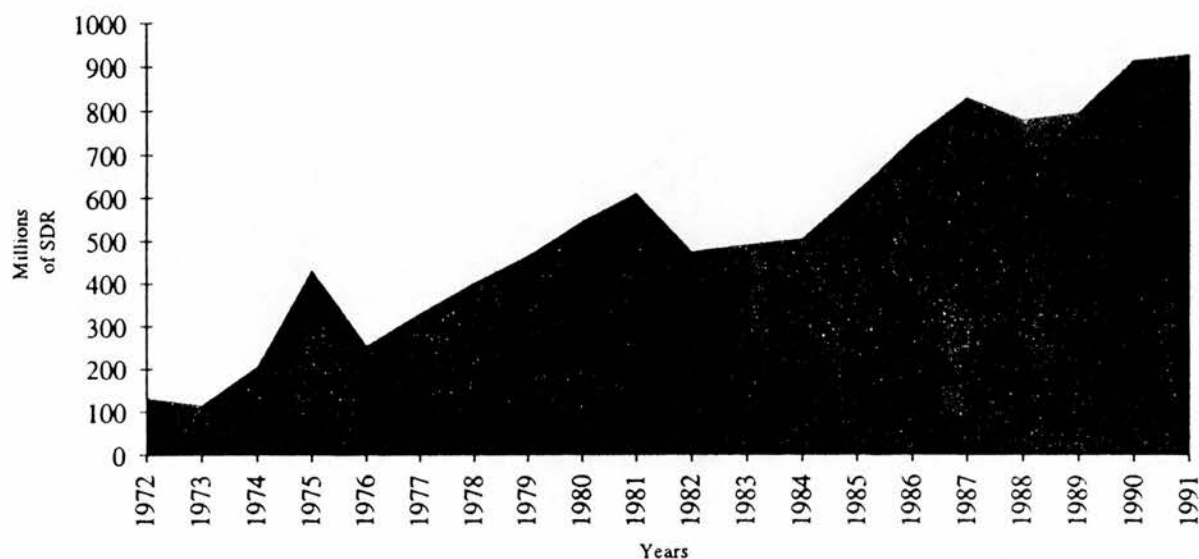
Development and structural changes in the export sector during the 1980s could broadly be characterised by three principal factors. First, growth in exporting. Second, changes in the percentage share of total exports of marine products held by the "principal export organisations". Third significant shifts in the distribution of marine products by export markets.

3.6.2.1. Growth in Exporting

The most commonly used categorisation of marine products in all exporting statistics in Iceland is into: fresh, frozen, salted, dried, oil and meal and canned. The substantial increase in fish catching during the 1970s and 1980s was logically reflected in an equivalent increase in exporting volume of some of the principal marine products categories. Evidently, the three main product categories of demersal species, i.e. fresh, frozen and salted showed some apparent increase in exporting during the '70s and '80s. Similar development took place in the exporting of commodities like fish meal and fish oil. (Appendixes 3.10a. and 3.10b.) As shown in Figure 3.9., the total export value of marine products grew quite steadily, from around 100 million SDR¹⁴⁶ in 1972 to nearly 900 million SDR in 1991. This growth in exporting, which could be largely explained by an increased volume, was also spurred by some considerable increases in export prices, particularly in some of the groundfish product categories such as landfrozen, frozen-at-sea and salted. (Table 3.7.) In the exporting of other species or commodities, like crustaceans, fish meal, fish oil and salted and frozen herring, more fluctuations generally remained in their export prices.

Figure 3.9.

**Export value of marine products 1972-1991,
in millions of SDR**



Source:

Calculated from Útvegur 1991, Fiskifélag Íslands 1992.

Table 3.7.

Prices of exported fish products 1984 - 1991

Prices in SDR.
Indices 1986 = 100

	1984	1985	1986	1987	1988	1989	1990	1991
Land frozen products	90.6	97.9	100.0	114.9	108.8	108.2	125.2	142.2
Sea frozen products	NA	NA	100.0	132.5	134.0	133.4	155.5	179.2
Saltfish products	78.7	82.7	100.0	120.7	112.4	103.9	128.0	142.5
Stock fish	134.4	127.1	100.0	97.6	97.8	102.5	102.2	106.2
Total demersal species excluding fresh on ice	88.8	94.5	100.0	116.2	110.1	106.8	125.7	142.0
Lobsters	104.1	106.4	100.0	97.1	95.9	102.0	106.4	108.5
Scallops	78.5	73.2	100.0	109.8	108.7	106.5	96.8	90.4
Shrimp total	75.3	73.1	100.0	109.8	108.7	106.5	96.8	88.1
Fish meal and oil	134.6	113.7	100.0	102.4	145.4	130.6	114.9	124.7
Salted and frozen herring	134.2	117.5	100.0	95.1	97.3	103.3	103.1	95.8

NA = Not available

Source:

The Icelandic Economy, Developments 1990 and outlook for 1991. National Economic Institute, Reykjavík May 1991.

Information received from the National Economic Institute (ÁD) 14.09.1993.

3.6.2.2. Firms Share in Exporting

Although at times during the 1950s to 1970s a number of new firms entered the export sector, relatively few of these companies managed to remain in the business for more than a few years. The initial structure of the export sector therefore remained largely intact until the beginning of the 1980s, when a wave of new and small firms came to the scene, especially between 1983 and 1988.¹⁴⁷ Evidently, during the 1980s the "principal export organisations" lost considerable share in the total export of marine products. As indicated in Table 3.8., the main reason for the shrinking share of "principal exports organisations" between 1982 and 1991 was the relative reduction in share held by the two principal exporters of frozen fish products i.e. S.H. and S.Í.S. As an indicator of the relative loss these two organisations suffered during the 1980s, it appears that S.H's relative share in the total exports of marine products in the years 1990 and 1991 was about 25 per cent lower than its average in the years 1982 and 1983. The share of S.Í.S. fell around 16 per cent in the same period. The possible factors explaining this relative loss experienced by the two principal exporters of frozen products are provided in section 6.1.3. The share held by S.L. also dropped remarkably by more than 60 per cent, mainly because of the reasons stated earlier, i.e. the withdrawal of some of their principal members from the organisation and the financial insolvency of some others. (Appendix 3.11.) The two export organisations of salted fish products Síldarútvegsnefnd and S.Í.F., retained their share in the total export of marine products and both these firms virtually kept their dominating positions as sole exporters of salted marine products until the end of 1992.

Table 3.8.

**Combined share of the principal export organizations
as a percentage of total exports of marine products from
Iceland, 1982 - 1991**

Year	Percentage ¹⁾ share of the 5 principal	Percentage ²⁾ share of the 3 principal
1982	77.0	71.5
1983	76.7	70.5
1984	69.5	62.5
1985	66.0	60.3
1986	64.4	60.4
1987	66.5	62.3
1988	61.3	56.5
1989	60.6	56.4
1990	58.2	54.3
1991	59.2	57.0

1) The 5 principal Export Organisations included are: S.H. Í.S. (S.Í.S), S.Í.F, Síldarútvegsnefnd, and S.L..

2) The 3 principal Export Organisations included are: S.H. Í.S. (S.Í.S.) and S.Í.F.

Sources

Útvegur, 1990, 1991, Fiskifélag Íslands

Hagtíðindi, various issues, Seðlabanki Íslands

S.Í.S., Sjávarafurðadeild,

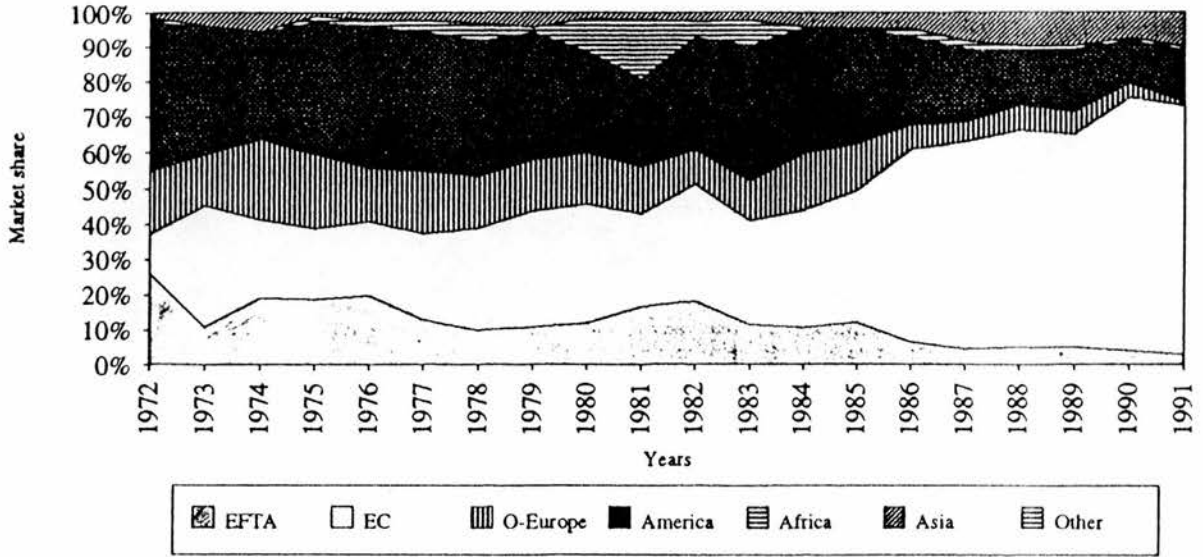
annual reports, 1989, 1990 and other specially provided informations.

3.6.2.3. Relative Size of Export Markets

In the second half of the 1980s, important changes appeared in the relative size of the main export markets for Icelandic marine products. As indicated in Figure 3.10., the most significant shift was from the American market to the EEC market. Other significant changes were the increased exports to countries in East Asia, mainly Japan, Taiwan and South Korea, and the dramatic collapse in exporting to countries in the Eastern European market, mainly the former U.S.S.R. and Poland. (Appendix 3.12.)

Figure 3.10.

**Export value of marine products
by market areas, 1972-1991.**



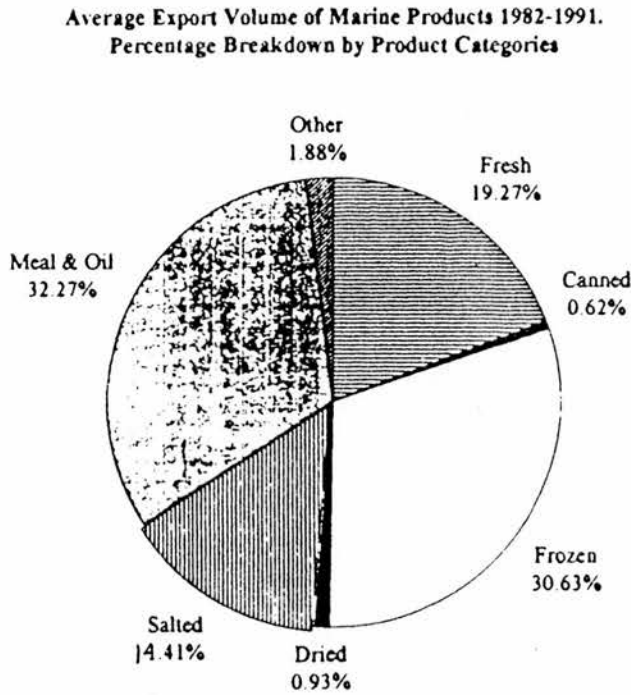
Source Útvegur, various issues, Fiskifélag Íslands.

3.6.3. Product Categories and Export Markets

The relative share of each product category in the total export of marine products has generally shown considerable fluctuations between years, mainly because of big fluctuations in capelin fisheries and export of capelin products. (Appendix 3.10a. and 3.10b.) A common feature of commodities like fish whole-on-ice, fish oil and fish meal, is that their relative share in exporting is generally much lower in terms of value than volume. As indicated in Figure 3.11. and Figure 3.12., the main produce of pelagic species (meal and oil) represented on the average around 32 per cent of the exports volume of marine products between 1982 and 1991, but only around 8.5 per cent in value terms. Similarly, the share of whole-fish-on-ice remained on average around 11 per cent (St.Dev. 3.97) of the value and around 19 per cent of the volume (St.Dev. 5.25) of total marine product exports between 1982 and 1991. On average the value share of dried fish between 1982 and 1991 was around 2.4 per cent (St.Dev.

1.68) and around 0.90 per cent in terms of volume (St.Dev. 0.53). By comparison, the various frozen and salted products represented on average around 53 per cent (St.Dev. 3.74) and 22 per cent (St.Dev. 3.04) of the value, but only around and 31 per cent (St.Dev. 7.39) and 14.5 per cent (St.Dev. 3.90) of the volume respectively.

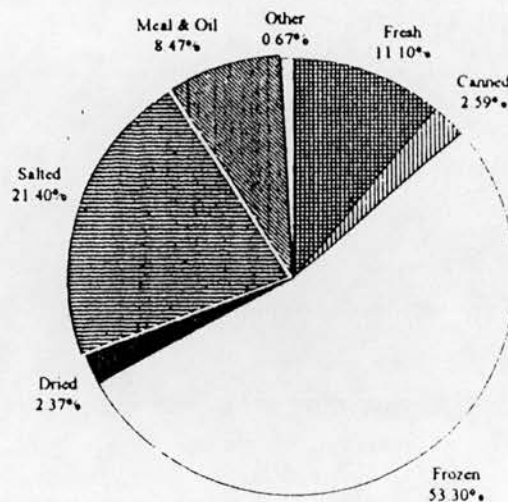
Figure 3.11.



Source Útvegur, various issues, Fiskifélag Íslands

Figure 3.12.

Average Export Value of Marine Products 1982-1991.
Percentage Breakdown by Product Categories.



Source Útvegur, various issues, Fiskifélag Íslands

3.6.3.1. Fresh-on-Ice

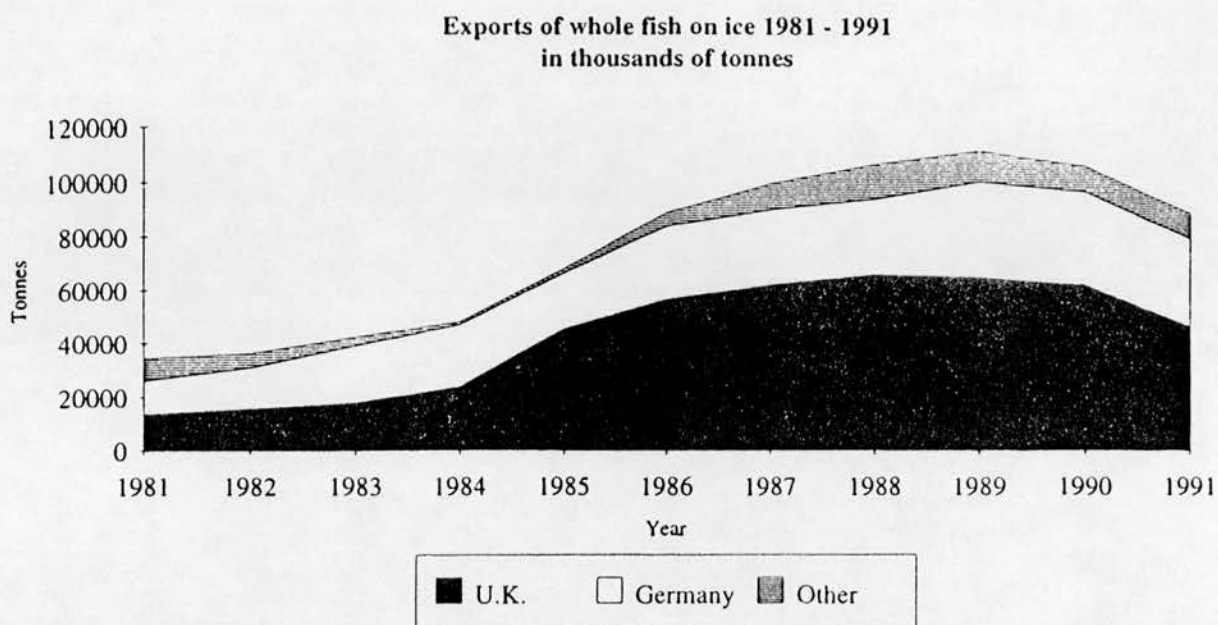
The fresh fish exports could broadly be categorised into two categories. Firstly, there are the exports of fish whole-on-ice which are exported either in containers by cargo vessels, or landed directly from Icelandic vessels in foreign ports. Secondly, there are the exports of fresh fillets, which are mainly exported chilled on ice by airplanes to foreign markets.

3.6.3.1.1. Whole-on-Ice

For decades an important share of the Icelandic catch of demersal species had been exported whole and unprocessed to the fresh fish markets in the U.K. (Hull and Grimsby) and Germany (Bremerhaven and Cuxhaven). Previously, most of these exports were in the form of direct landings from Icelandic vessels in the respective fishing ports, but in the early 1980s a new preservation and transportation technology

and increased demand in the principal fresh fish markets, boosted the exporting of fish whole-on-ice in containers. The most pronouncing increase occurred between 1985 and 1989, and in 1989 exporting of fish whole-on-ice constituted nearly 27 per cent of the total volume of marine products exported from Iceland. (Figure 3.13.)(Appendix 3.13.) The principal species exported fresh whole-on-ice, have in recent years, been cod, redfish, haddock, saithe, and plaice. About 30 per cent of the annual total catch of haddock has in recent years been exported whole-on-ice and about 70-80 per cent of the plaice catch. About 10 per cent of the annual catch of cod, saithe and Greenland halibut is exported whole-on-ice and about 30 per cent of the annual redfish catch of which 2/3 are landed directly in foreign ports by the Icelandic fishing vessels. Redfish has in the 1990s been the only species which has shown a relatively increasing share of its exports being in the form of fresh whole-on-ice, as, since 1989, the relative share of species like cod and haddock, exported whole-on-ice, has fallen markedly. Only a very small proportion of the pelagic catch is normally disposed of fresh at foreign markets, but between 1986 and 1990 on average about 5 per cent of the annual capelin catch was disposed of fresh at foreign markets, mainly in the Faroe Islands. The dominant markets for whole-on-ice, cod and haddock have generally remained in the U.K., which has in recent years received around 90 per cent of the exports of these species. Similarly, the exports of whole-on-ice plaice have largely been exported to the U.K. market and increasingly to Holland. The principal markets for whole-on-ice saithe and redfish have conversely been in Germany, which had received around 90 per cent of the redfish exports and about 2/3 of the saithe exports, with the U.K. market generally receiving around 20-25 per cent of the latter one.

Figure 3.13.



Sources

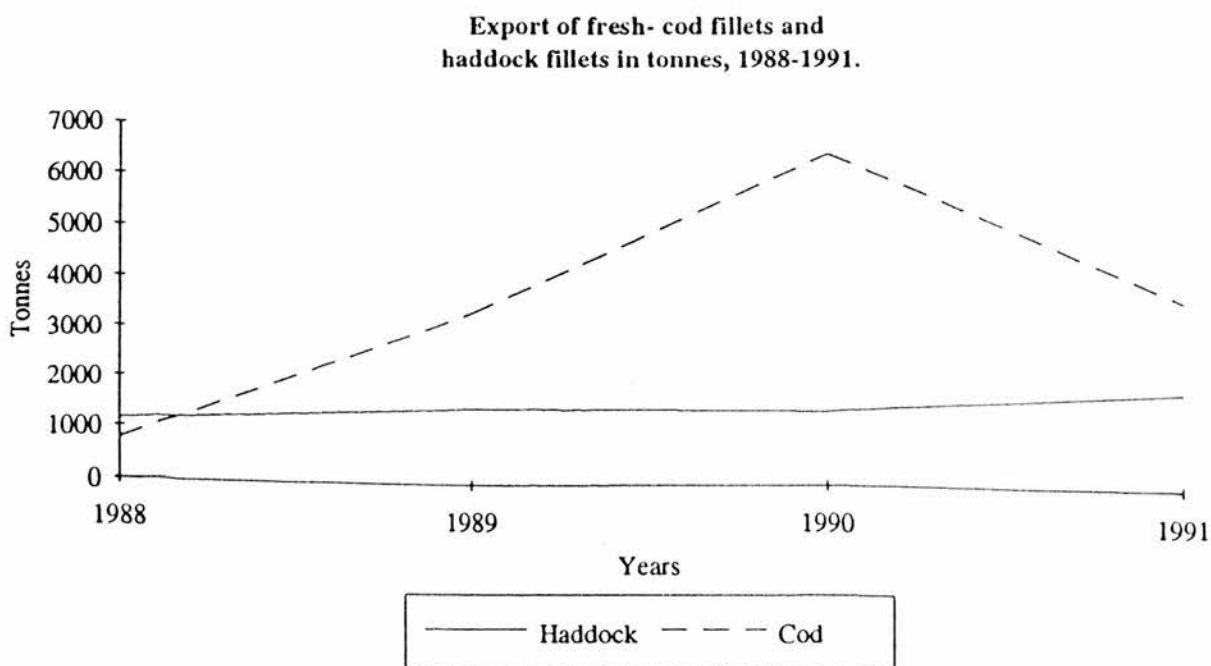
Hagtíðindi various issues, Hagstofa Íslands
Útvegur 1991, Fiskifélag Íslands.

3.6.3.1.2. Fresh Fillets Chilled-on-Ice

Currently, most of the exports of fillets fresh-on-ice are exported by air. As perishability of fish fillets exported fresh-on-ice is very high, and the only international airport in Iceland is located in the South West part of the country, virtually all the processing firms which are producing and exporting fresh fish fillets are located in the South West region i.e. in Reykjavík and the surrounding area. Haddock is the main species exported fresh-on-ice by air, and along with cod, accounts for nearly 90 per cent of the export. Other exported species are redfish, catfish and halibut. No official statistics were available in Iceland for the amount of fresh fillets exported before 1988. Between 1988 and 1991, the U.S. market received about 80 per cent of the haddock fillets. The phenomenal growth in exporting of

fresh cod fillets (flatted-on-ice) during the years 1988-1991, (Figure 3.14.), is mainly explained by the effort made by some exporters in Iceland and foreign importers, mainly in Denmark and Spain, to escape the domestic restrictions which existed in Iceland in the exporting of salted groundfish products (see section 3.3.2.). Most of the exports of this cod flatted-on-ice, were then utilized into saltfish production.

Figure 3.14.



Source Útvegur 1991, Fiskifélag Íslands.

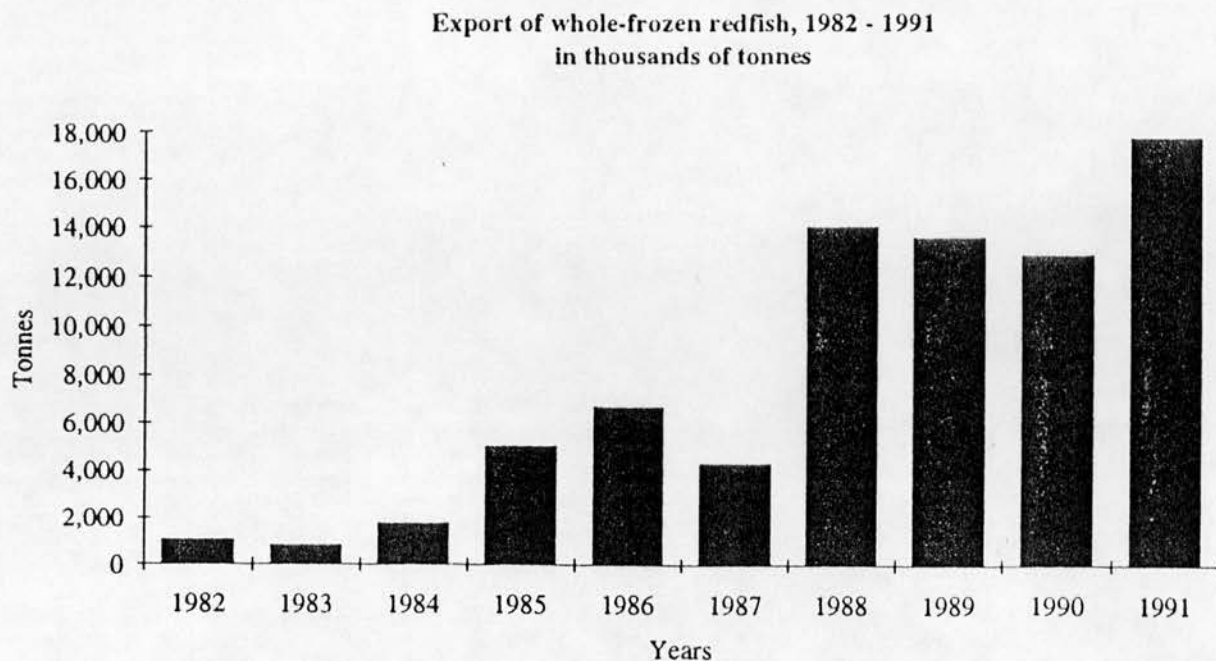
3.6.3.2. Frozen Products

About 98-99 per cent of the total exports of frozen marine products is accounted for by the exporting of demersal species and the three main species of crustaceans, shrimps, lobsters and scallops.

3.6.3.2.1. Frozen Demersal Species

Between 1982 and 1991, frozen groundfish products constituted on the average around 80 per cent in the total exports of frozen marine products and around 40 per cent of the total exports value of marine products in general. The combined share of frozen block and frozen fillets of haddock, cod and saithe was on average around 70 per cent of the total exports value of frozen groundfish products, (Appendix 3.14) where of, frozen cod-block and frozen cod-fillets constituted on the average about 70 per cent. As earlier stated, significant shifts appeared in the exporting of some standardised land-frozen groundfish products in the second half of the 1980s, mainly frozen- blocks and fillets of cod, haddock, and saithe. Currently the principal markets for block-frozen and frozen fillets of haddock remain in the U.S., the U.K.. For block-frozen and frozen fillets of cod and saithe the main markets remain in the U.S. and the U.K., along with France and Germany which in recent years have become the two biggest markets for block-frozen saithe. (Appendix 3.15.) The other main frozen groundfish products have usually been redfish and flatfish, mainly Greenland halibut and plaice. Previously, most of the frozen redfish was exported in the form of frozen fillets, but increasingly redfish is now exported whole-frozen. In 1982 the total exports of whole-frozen redfish was only 1,045 tonnes compared to 17,568 tonnes in 1991. (Figure 3.15.) (Appendix 3.14.) Until 1984, Germany remained the principal market for whole-frozen redfish along with some other more temporary markets, such as Israel and Cyprus, but after the start of exporting to Japan and to South Korea in 1984 and 1985, these countries became the biggest markets for whole-frozen redfish, importing between 70-80 per cent and 5-10 per cent respectively.¹⁴⁸ The principal markets for frozen redfish fillets, which in 1991 represented around 4 per cent of the total exports value of frozen groundfish products compared to nearly 17 per cent in 1982, currently remains in France and Germany. (Appendix 3.16.)

Figure 3.15.



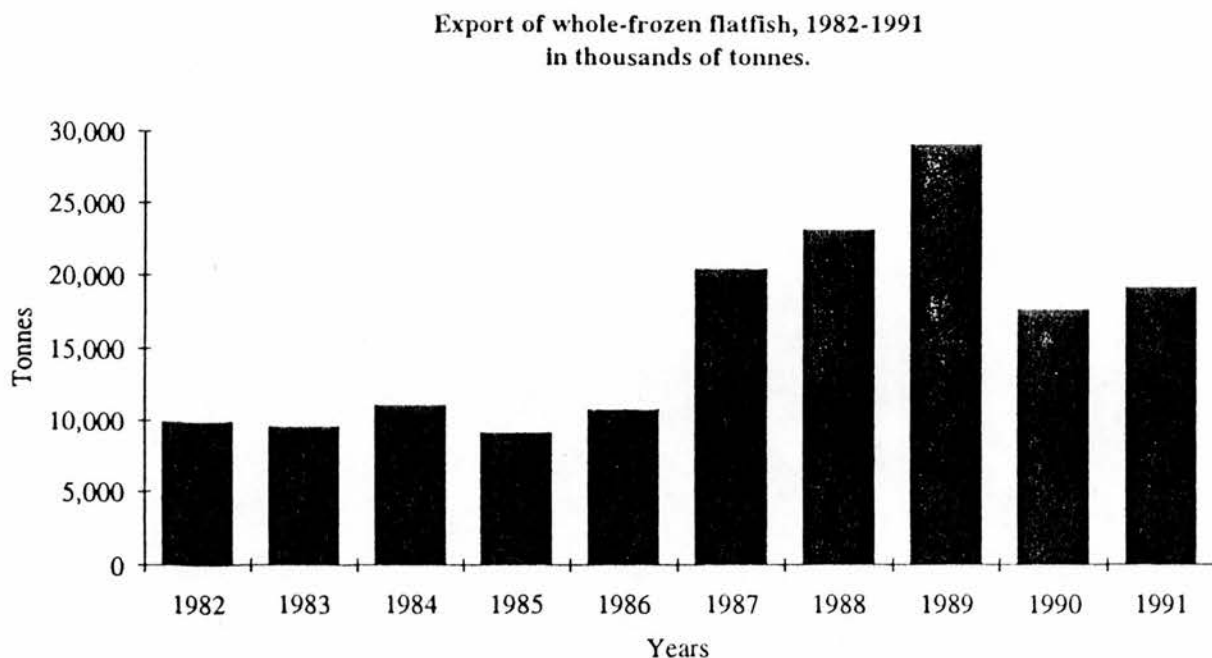
Source

Calculated from Útvegur various issues, Fiskifélag Íslands.

Whole-frozen flatfish has in recent years become increasingly important in frozen groundfish exporting. The growth in exporting of whole-frozen flatfish has not only been caused by the increased catch of flatfish species, but also by the increased share of flatfish being exported in the form of whole-frozen instead of frozen fillets. Greenland halibut accounts for the biggest share of the whole-frozen flatfish exports, representing some 80 per cent share in 1990, with some considerable and increasing part of it being frozen-at-sea. In 1989 exports of whole-frozen flatfish constituted around 29,000 tonnes, or nearly 13 per cent in the total exports value of frozen groundfish products, compared to 9,900 tonnes in 1982 and 4 per cent respectively. (Figure 3.16.) In the early 1980s the principal markets for whole-frozen flatfish remained in the U.S.S.R. and West Germany, but for whole-frozen plaice the main markets have usually remained in the U.K. In the mid 1980s, when exports to Japan

and Taiwan, started these markets quickly became the two biggest markets for whole-frozen Greenland halibut and at the end of the 1980s these two markets were receiving around 80 per cent of the total exports of whole-frozen flatfish from Iceland.¹⁴⁸ (Appendixes 3.17.)

Figure 3.16.



Source

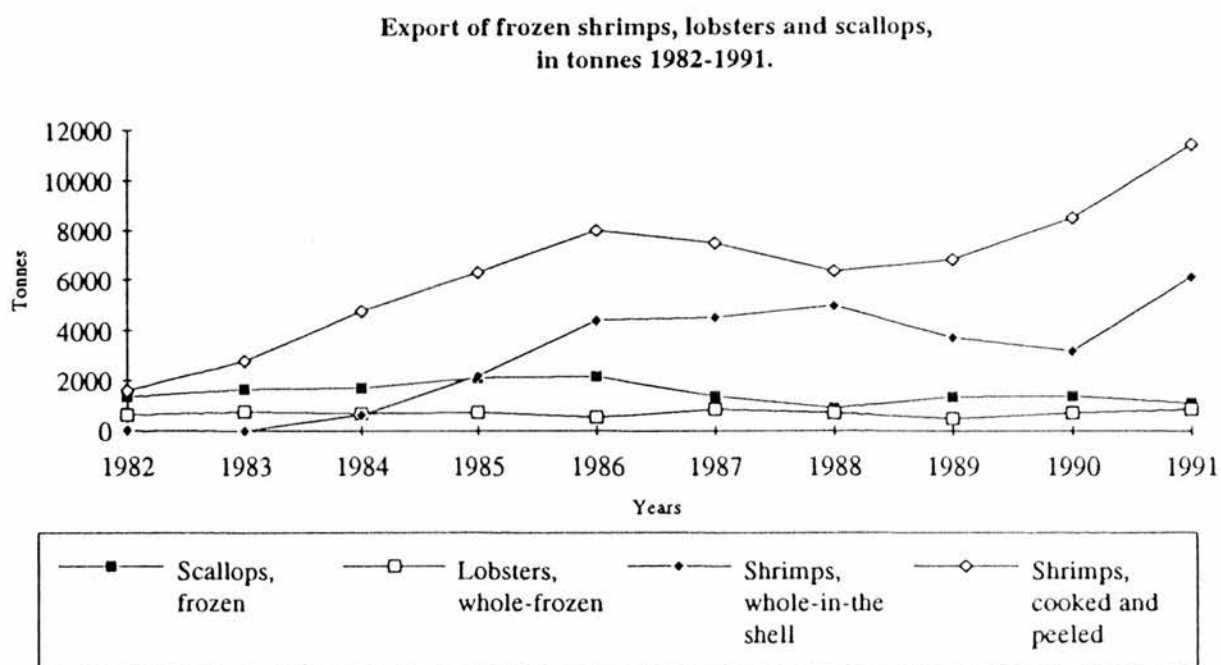
Calculated from Útvegur various issues, Fiskifélag Íslands.

3.6.3.2.2. Frozen Crustaceans

The share of crustaceans in the exporting of frozen marine products showed some considerable increase during the 1980s. This increase was primarily constituted by the big increase which materialized in the exporting of frozen shrimps, either whole in the shell or cooked and peeled. Other products comprising the exports of frozen crustaceans are mainly whole-frozen lobsters and IQF scallops meat. (Figure 3.17.) As indicated in Figure 3.17. exports of whole-frozen shrimps in the shell literally

took off in the mid 1980s with the start of exporting to Japan. Since 1985, the Japanese market has received between 70 and 80 per cent of the export value of whole-frozen shrimps with the Danish market as the second biggest, receiving around 20 per cent in recent years. The principal markets for cooked and peeled frozen shrimps have for some long time been in the U.K. and in Denmark. Between 1982 and 1991 these two markets have on the average received around 80 per cent of the total exports volume, with the U.K. market discretely receiving between 50 and 60 per cent.

Figure 3.17.



Source

Calculated from Útvegur various issues, Fiskifélag Íslands

The export volume of frozen scallops and frozen lobsters remained relatively stable during the 1980s and early 1990s, but important changes appeared in the market distribution of these products in the late 1980s. Previously, the U.S. market received around 90 per cent of the exports of these products, but by 1988 and 1989, an

increasing share of these products started to be exported to countries within the EEC, with Denmark and France as the principal markets for frozen lobsters and France taking over as the dominant market for frozen scallops meat.

3.6.3.3. Salted Products

The exports of salted products can be categorised into three main product groups, salted groundfish, salted herring and salted roe.

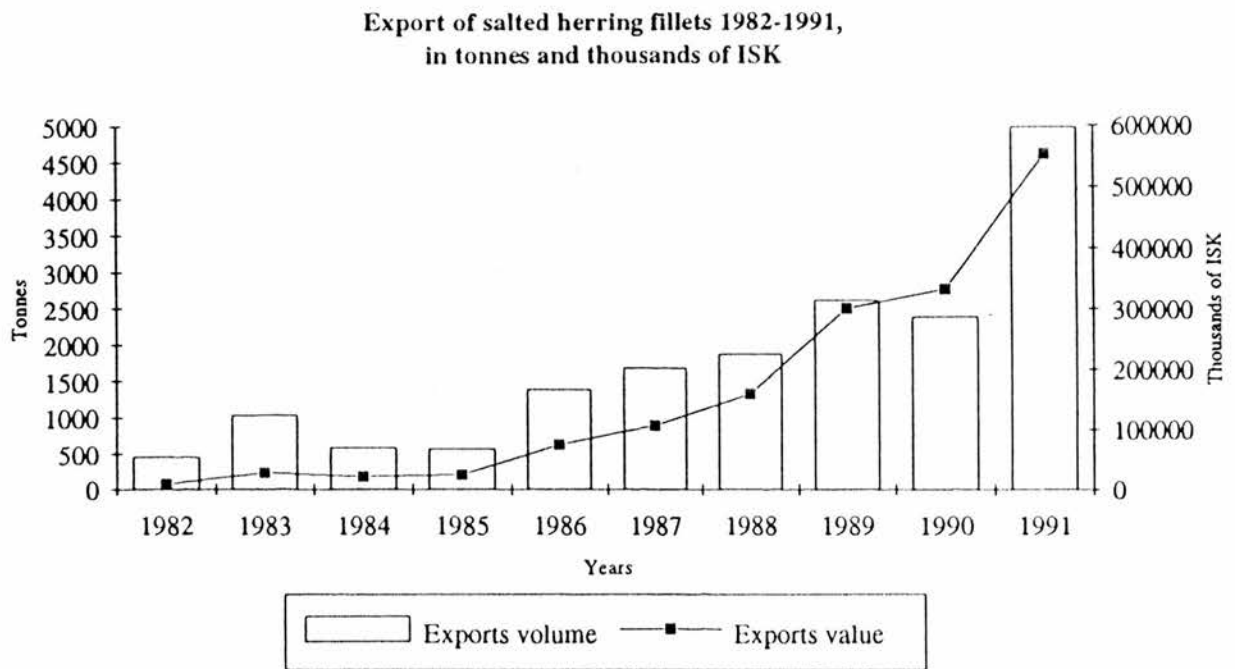
3.6.3.3.1. Salted Groundfish

Apparently, salted groundfish products have represented around 80 per cent of the exports of salted products. In recent years about 75-80 per cent of the exports of salted groundfish products has been "uncured wet-salted," around 10-15 per cent "salted fillets" and around 3-4 per cent "dry-salted". The principal markets for salted groundfish products have historically remained in the Mediterranean countries Spain, Portugal, Italy and Greece, although the principal markets for various dry-salted groundfish products have in recent years been in countries in the Caribbean. During the first half of the 1980s and until 1988, usually around 60 to 70 per cent of the uncured wet-salted groundfish produce was exported to Portugal, around 20 per cent to Spain and between 5 and 10 per cent to each of the markets in Greece and Italy. Since 1988, an increasing share of the uncured wet-salted groundfish exports has been exported to the markets in Spain, Italy and France. Export of salted groundfish fillets has in recent years largely gone to the markets in Spain, Germany, and Italy, with most of the fillets exported to Germany being the produce of saithe but the fillets exported to the other markets the produce of cod.

3.6.3.3.2. Salted Herring

Until 1988, the dominant share of salted herring products was exported whole-salted. After the closure of the principal market for "whole-salted herring" in the U.S.S.R. in 1988, there have literally been no exports of whole-salted herring, and the main salted herring products have since been "headless and gutted," and "salted fillets," which have shown some substantial growth in recent years.(Figure 3.18.) The principal markets for headless and gutted salted herring remain in Poland and Finland, and for salted herring fillets the principal markets remain in the Scandinavian countries (Sweden, Denmark, Finland), and in Germany.

Figure 3.18.



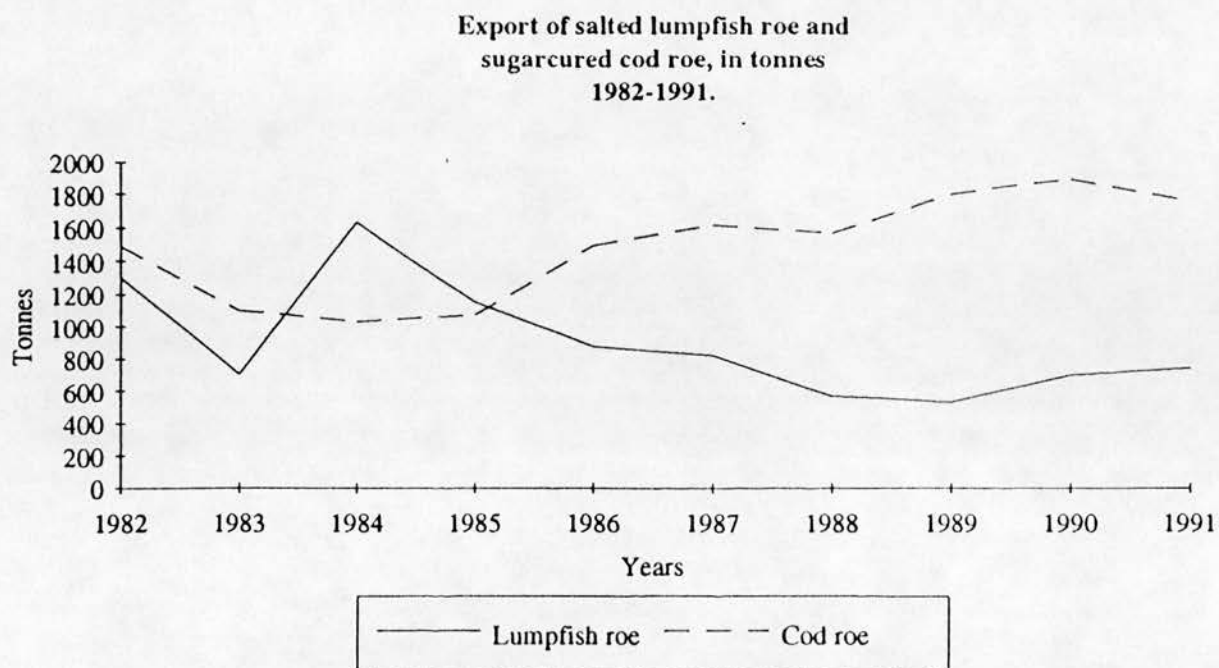
Source

Calculated from Útvegur various issues, Fiskifélag Íslands

3.6.3.3.3. Salted Roe

The principal products of salted roe are "salted lumpfish roe" and "sugarcured cod roe." During most of the 1980s, exports of salted lumpfish roe showed some decrease in volume, and was on the average in the period 1986-1991 only around 700 tonnes compared to an average of nearly 1,200 tonnes in the period 1982-1985. Exports of sugarcured cod roe showed, on the other hand, some apparent increase during the second half of the 1980s and the early 1990s. During the period from 1982-1985 the average exports of sugarcured cod roe was around 1,170 tonnes compared to some 1,700 tonnes in 1986-1990. (Figure 3.19.) The principal market for salted lumpfish roe has for some long time been Denmark, which had in recent years received around 70 per cent of the exports. Other important markets are in the U.S., Spain, and France, although exports to France have in the last few years diminished significantly. The main markets for sugarcured cod roe have for a long time been Sweden, which usually has imported around 70-80 per cent of the total volume exported from Iceland. During the 1980s, Greece remained the second most important market for sugarcured cod roe, but in the late 1980s and early 1990s exporting to Greece showed a substantial decrease and Norway replaced Greece as the second biggest market. Since 1988 around 90 per cent of the total exports of sugarcured cod roe have been exported to the pre-cited Scandinavian countries.

Figure 3.19.



Source

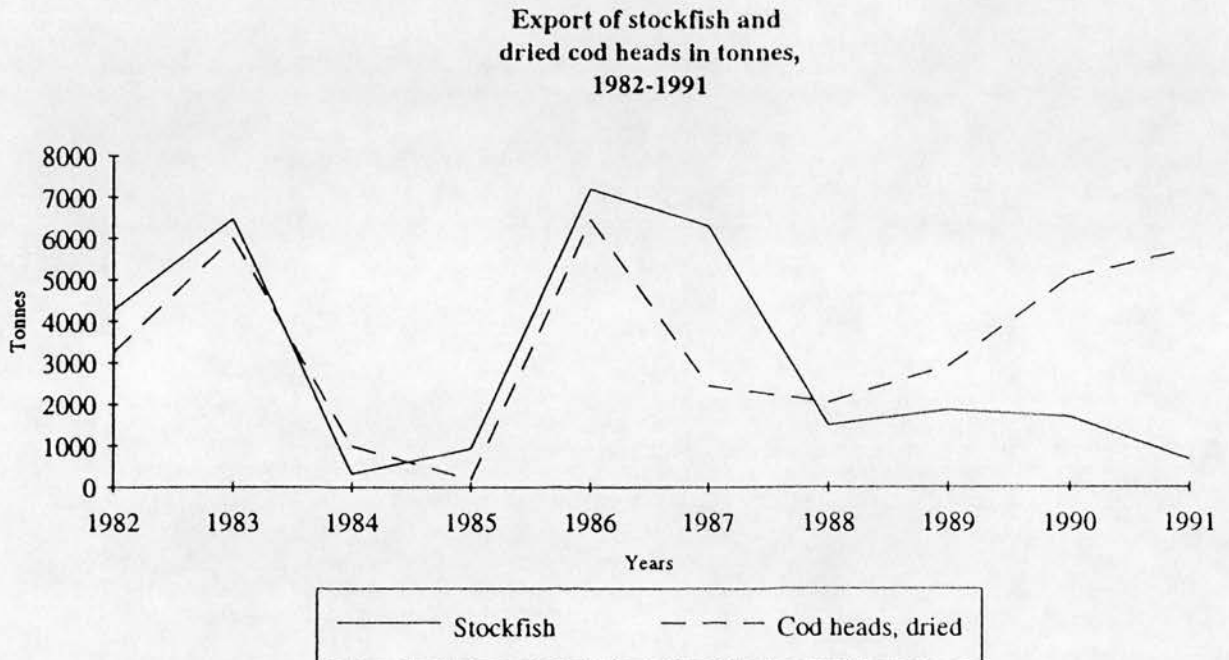
Calculated from Útvegur various issues, Fiskifélag Íslands

3.6.3.4. Dried Fish Products

During the period 1982-1991, the exporting of dried fish showed some big fluctuations which primarily were due to variations in market conditions in Nigeria, the principal market for dried fish products. (Figure 3.20.) Exporting of dried fish products reached its heights in 1980 and 1981 when it was close to 19,000 tonnes and nearly 16 per cent of the total export value of marine products. Since then, the importance of dried fish products in the total exporting of marine products has been relatively insignificant and went down to 0.16 per cent in 1985. (Appendix 3.10B.). Figure 3.20. shows export development of the two main dried products, i.e. "stockfish" and "dried cod heads" between 1982 and 1991. The only market for dried cod heads has remained in Nigeria, which has also remained the dominant market for stockfish exports. Another important market, which generally has shown much more stability than the Nigerian market is Italy. In 1982-1985 the total exports

of stockfish to Italy were on the average around 380 tonnes per year but, between 1986 and 1991 the annual average exports was close to 850 tonnes.

Figure 3.20.



Source

Calculated from Útvegur various issues, Fiskifélag Íslands

3.6.3.5. Fish Oil & Fish Meal

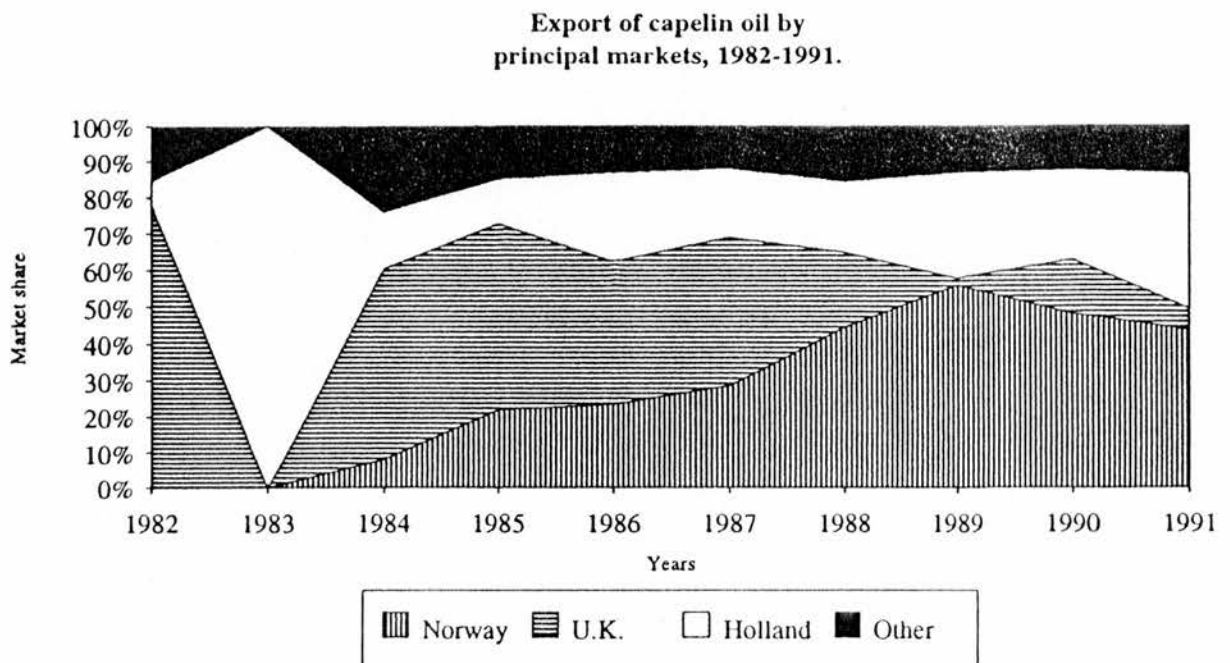
The principal forms of fish oil exported are "cod liver oil for human consumption" and "capelin oil." Similarly for the fish meal exports the main products are "capelin meal" and "cod meal."

3.6.3.5.1. Fish Oil

Between 1982-1991, cod liver oil for human consumption represented on average around 2.5 per cent of the total exports volume of fish oil, and around 15 per cent on the average of the total exports value. The respective shares of capelin oil were

around 93 per cent and 77 per cent. Apparently, exporting of capelin oil has shown considerable fluctuations over the years, ranging from only 55 tonnes in 1983 to just over 122,000 tonnes in 1985. (Appendix 3.19.) Until 1986 the U.K. market remained the biggest market for capelin oil, although other markets like Holland and Germany also accounted for an important share. In 1984, exporting to Norway started to increase significantly as did exports to Holland. In 1988 the Norwegian and Dutch markets had developed to become the principal markets for Icelandic capelin oil and were in 1990 and 1991 importing around 80 per cent of the total exports.(Figure 3.21.)

Figure 3.21.



Source

Calculated from Útvegur various issues, Fiskifélag Íslands

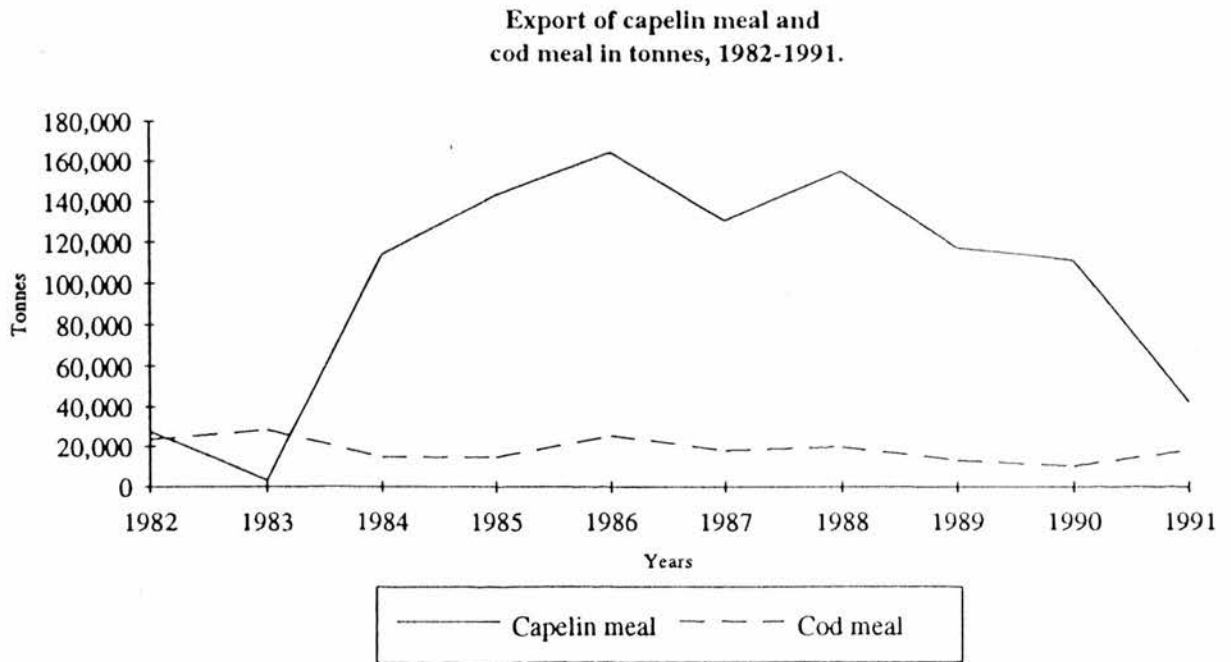
Although the relative export volume of cod liver oil for human consumption has in recent years remained fairly stable and even decreased, the relative export value has shown some significant growth. The relative increase in export value is evidently

mainly derived from the increasing share of cod liver oil for human consumption being exported in consumer packaging,¹⁵⁰ although the biggest share of the exports is still, like the capelin oil exported in a bulk form. In recent years, the principal markets for cod liver oil have been in Norway, the U.K. the U.S. and Germany with a combined share of around 70 per cent of the exports, but other markets in East Asia and South America have usually also imported some important shares of the total export volume.

3.6.3.5.2. Fish Meal

The export of capelin meal has over the years usually accounted for around 80-90 per cent of the volume of fish meal exports although, in a similar way to the exporting of capelin oil there have usually been big fluctuations in the volume of exports. Exporting of cod meal and, especially, redfish meal has in recent years shown important decreases. The export of cod meal has in recent years usually been around 10-15 per cent of the total export of fish meal, but exporting of redfish meal which in the early 1980s was around 10,000 tonnes has in recent years come down to zero. (Figure 3.22.)

Figure 3.22.



Source

Calculated from Útvegur various issues, Fiskifélag Íslands

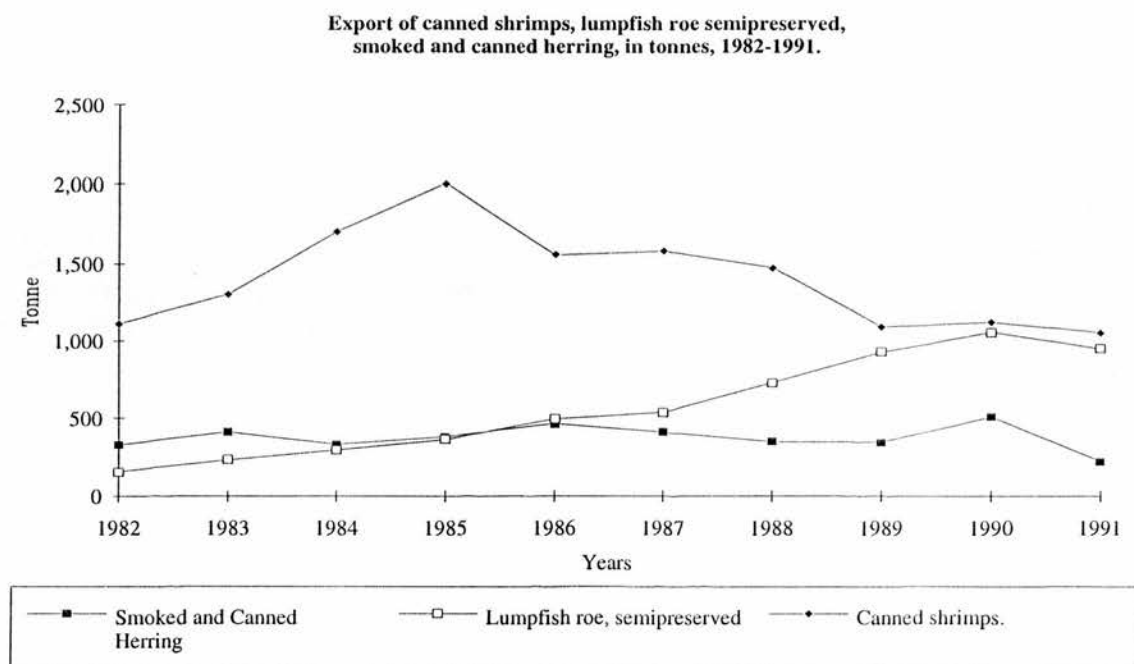
At the end of 1980s and the beginning of 1990s "specialised fish meal for fish feeds" started to take an increasing share in the fish meal export and was around 10,000 tonnes both in 1990 and in 1991. (Appendix 3.19.) During the second half of the 1980s, the biggest share of the cod meal produce was exported to Poland, but other markets such as the U.K. and Germany also used to receive an important part of the exports of cod meal. After the closing of the Polish market in 1990, the U.K. became the principal market for Icelandic cod meal, and along with the markets in Germany, Sweden and Denmark accounted for around 98 per cent of the total exports of cod meal in 1991. Like the exporting of cod meal, the Polish market was an important market for capelin meal but after its closure, capelin meal export has become increasingly dependent upon the U.K. market. Other main importing countries of capelin meal from Iceland have in recent years been Denmark, Finland and France

and collectively these countries have accounted for around 95 per cent of the total exports of capelin meal from Iceland.

3.6.3.6. Canned Products.

The export of various canned products grew relatively quickly during the 1970s and early 1980s and constituted on average around 2.5 per cent of the total export value of marine products between 1982 and 1991 and around 0.6 per cent in volume terms. In recent years the main canned products exported have been "canned shrimps," "semi-preserved lumpfish roe," and "smoked and canned herring." As shown in Figure 3.23, the export of canned shrimps peaked in the mid 1980s but decreased quite sharply after that and was in 1991 only about half of the volume in 1985. Conversely, there has been a big increase in the export of semipreserved lumpfish roe which has nearly tripled in export volume over the same period. During the 1970s and to the mid 1980s "canned herring bits," which mainly were exported to the previous U.S.S.R., retained an important share of the export of canned products. In the first years of the 1980s canned herring bits had around a 20 per cent share in the total export value of canned products. Other canned products exported have in recent years mainly been "cod liver" and "herring fillets."

Figure 3.23.



Source

Calculated from Útvegur various issues, Fiskifélag Íslands

The principal market for "semipreserved lumpfish roe" has in recent years been in France which between 1982 and 1991 imported on the average around 55-60 per cent of the total export volume and value from Iceland. Other important markets in recent years have been in the U.S., Germany, Belgium and Italy. The biggest market for canned shrimps is in Germany, which in the beginning of 1980s accounted for around 90 per cent of the exports. In recent years Germany has imported around 70-75 per cent of the export of canned shrimps from Iceland, and France which has increased its share significantly to around 20 per cent. Other but small markets have mainly been Denmark and the U.K. As illustrated in Figure 3.23. there were some fluctuations in the export of smoked and canned herring. The only market for smoked and canned herring has remained the U.S. which has in recent years received around 80-90 per cent of exports.

Conclusions

In this chapter we have shown that most of the work of researchers on the Icelandic fishing industry has focused on the fishery sector, but the two other defined sectors of the industry have so far attracted little attention. The ending of the latest Cod War, not only prompted the opening of a new era in international law concerning constitution of the open-sea areas, but also marked the beginning of significant changes within all sectors of the fishing industry. The period from the mid 1970s to the beginning of the 1990s was characterised by large investments in both the fishery and processing sectors. The fishing fleet grew significantly, particularly the number of deep-sea trawlers and small boats and in the processing sector the main investment was in land-based freezing plants and in machineries for processing and freezing onboard the deep-sea trawlers. In the 1970s and 1980s there was a big growth in the total quantity of marine catch, which was due to both an increased catch of many traditional groundfish species and to increased exploiting of species such as capelin, Greenland halibut and beaked redfish (*Sebastes mentella*). The processing sector is like the fishery sector subject to big seasonal fluctuations, and its activity is significantly dependent upon both supply conditions of raw material from the fishery sector and various conditions in the export sector such as the prevailing export prices and product demand. In the processing sector important changes appeared both in its structure and in processing methods of various demersal and crustaceans species. The structure of the processing sector has in recent years become less concentrated and the number of firms in the sector has increased significantly. Most of the firms in the sector are in primary processing but the number of firms in secondary processing are very few. The principal processing methods are, freezing, salting, oil & meal, drying and canning but the amount of fish processed and frozen-on-board the trawlers has in recent years showed important growth as well has the processing and exporting of fresh fillets on ice. The initial structure of the export sector was

largely formed in the 1930s and 1940s when four export organisations were established with some strong support from the Icelandic governments. Each of these export organisations specialised in the exporting of certain product categories, mainly, frozen and salted. The level of government incentive was mainly through either some direct involvement in the establishing and organisation of these firms or through the granting of exclusive licences for the export of the relevant product categories of marine products. In the 1970s the State initiated the establishing of a similar export organisation in the canned sector, after having earlier become involved in processing of canned marine products. Three principal factors are a feature of the development which emerged within the export sector during the 1980s. Firstly, the relatively steady increase which occurred in the exporting of marine products, could be largely explained by the increased export volume of all the main product categories, and by considerable increases in the export prices of certain products. Secondly, during the 1980s the principal export organisations lost considerable share in the total export of marine products from Iceland and a number of new firms entered the sector, especially in the second half of the 1980s. Thirdly, in the second half of the 1980s significant changes appeared in the distribution of marine products from Iceland by market areas. The most apparent shift was in the exporting of frozen products from the U.S. market to the European market and the start of exporting of whole-frozen groundfish products to markets in East Asia. It has been shown that there have been considerable fluctuations between years in the relative size of each product category in the total export value and volume of marine products. These variations are mainly linked to fluctuations in the export volume of capelin meal and capelin oil. The standardised frozen groundfish products, i.e. fillets and block, constitute the biggest share of the marine product exports by value terms, but in terms of volume the products of pelagic species i.e. fish meal and fish oil, usually account for the biggest share.

Due to over-investment in vessels and machinery and to government policy in Iceland, profitability, both in the fishery and processing sectors, has been poor in recent years. The business environment of the Icelandic fishing industry is shaped by a number of both domestic and foreign laws and regulations, various agreements between parties within the sector and by economic conditions in Iceland and in the export markets. The most significant legislations are, currently, the Fisheries Management Act governing all fisheries in Icelandic waters, a law controlling exporting of some marine products, a law concerning the control in handling and in production of marine products, a law concerning foreign investment in the Icelandic fishing industry and various import tariff regulations in foreign markets.

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- ¹ Value Added: is the true production in the sense of the National Accounts. Aggregated value added for all industries is equal to gross domestic product. There are two main basis for measuring value added. One is market value and the other is income value. The difference between income value and market value is that from market value we deduct indirect taxes and production subsidies. Value added at income base is equal to the sum of operating profit, salaries and depreciation.
- ² Calculated from :
Sjávarútvegur 1972-1977, Rit.13, Þjóðhagsstofnun 1977
Sjávarútvegur 1980-1985, Rit.34, Þjóðhagsstofnun 1987
Sjávarútvegur 1986-1987, Rit. 37, Þjóðhagsstofnun 1990
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The main points of the Act are:
1. The total catch for white fish shall be determined for a period of 12 months, with each fishing year starting at the 1st of September and ending at the 31st of August the following year.
 2. The Minister of the Fisheries decides, after having received recommendations from the Icelandic Marine Research Institute, the total catch permitted to be caught over a certain period of time - or a season.
 3. No one is permitted commercial fishing in Icelandic waters without having obtained a general fishing permit. Permits are to be issued for one year at a time. Fishing of the following species requires a special permit by the Ministry of Fisheries: all demersal species, shrimp, lobsters, shellfish, herring and capelin.

4. The quota allowed to each boat during each fishing period or season depends on the "total allowable catch" (TAC) set for that species and the boats share in that quantity as set by the Ministry of Fisheries.

5. The Ministry of Fisheries is allowed to compensate for a severe reduction in the TAC in one species by granting quotas in other species.

6. The quota of one fishing vessel can be transferred or added partly or completely to the quota of another vessel. Such transfer is however, restricted by certain limitations such as: a) Whether the recipient vessel has a clear capacity to fill its new and enlarged quota. b) The recipient boat must already possess a quota for the species to be transferred. c) The municipal council where the owner of a vessel with commercial fishing rights resides has the first option to buy it, if it is to be sold. All transfers of quotas must be authorised by the Ministry of Fisheries.

7. Fish caught by boats using longlining in January, February, November and December is only counted as half towards the quota set for a vessel.

8. The Minister of Fisheries can decide that fresh fish which is exported to markets abroad be counted with penalty mark-ups, as the total catch of a vessel is reckoned. The penalty mark-up is 20% for cod and haddock and up to 15% for other species.

9. Fishing vessels that process fish onboard are not allowed to sell their product directly in markets abroad without special permission from the Ministry of Fisheries.

10. Access of all new vessels is prohibited unless a comparable vessel is retired from the fleet.

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- 63 The currency basket is trade weighted, which means that each currency has a weight in the basket in relation to its average share in merchandise exports and imports. At the beginning of each year the amount of each currency in the basket is adjusted according to changes which have taken place in the weight of each currency in the merchandise trade.
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- 65 The exchange rate policy has frequently been described as the "Zero policy," i.e. a situation where firms in the industry are neither allowed to make profit or loss. Because of the much intergration within the fishing industry the governments have often pursued an exchange rate policy which has been aimed at maintaining profitability in either the fishery or the processing sector.
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- 68 The real exchange rate for the Icelandic króna is measured as the rate between the consumer price indices in Iceland and other countries, measured in the same currency and for the same period of time.
- 69 Baldursson, Fridrik Már, "Audlindaskattur og gengisstefna" Hagsæld í húfi. eds. Helgason, Þorkell and Jónsson, Orn D., Háskóli Íslands, Háskólaútgáfan and Sjávarútvegsstofnun Háskólans, 1990.
- 70 Þjóðhagsstofnun, Frétt, Nr. 10/91. Þjóðhagsstofnun estimated that at 1991 the cost of raw material for the processing sector was about 64 per cent of the operating income for firms in ground fish processing compared to 55 per cent at 1990.
- 71 OECD Economic Surveys 1992-1993, Iceland. OECD, Paris 1993.
- 72 Þjóðhagsstofnun, Frétt, Nr. 10/ 91
- 73 Act on Investment by Non-residents in Business Enterprises, No. 34 of 25 March 1991, Stjórnartíðindi A.
- 74 Foreign investment: Investment in enterprises in Iceland by a non-resident irrespective of whether this involves new equity capital or reinvestment of dividends distributed or shares or proceeds from sale of previous investment in this country. Act on Investment by Non-residents in Business Enterprises No. 34 of 25 March 1991, Stjórnartíðindi A

75 Non-resident: An individual residing abroad irrespective of nationality, a company, institution, fund or other legal person resident abroad, a foreign state or state enterprise, as well as a business enterprise under foreign control. An individual is deemed resident abroad if he has legal domicile abroad or domicile there as defined in the Act on Legal Domicile. A legal person is deemed to be resident abroad if registered as domiciled abroad or if the legal person's articles of association state its residence abroad.

76 "Tollar á útfluttum sjávarafurðum til Evrópubandalagsins 1989." working document received on the 26th of November 1990 from Halldór Árnason, Samstarfsnefnd fiskiðnaðarins.

77 A special clause in this agreement (Protocol 6) stipulated a special reduction or abolishing of import duties on various marine products imported from Iceland to the EEC.

78 Kolbeinsson, Árni. "Meginatriði sammings um EES á sviði sjávarútvegsmála. Tollar EB á íslenskum sjávarafurðum fyrir og eftir gildistöku EES-sammingsins." a talk given on a seminar in Viðey in Iceland, 13th of November 1992.

79 The EEA regime was supposed to come into effect on the 1st of January 1993, but as it had at that time not been ratified by all the EEC countries at that time its implementation held up until the 1st of January 1994.

80 According to the EEA agreement (Protocol 9) the EEC and the EFTA countries committed themselves to abolish all State subsidies which could disturb the competitive position of firms in the fishing industry in these countries.

81 "Skýrsla til sjávarútvegsráðherra," Draft, Reykjavík, 2, April 1993. Nefnd um mótun sjávarútvegsstefnu.

82 Eurofish Report, 13, September 1990.

83 This section is largely based on information from the two works by Sigfús Jónsson, i.e. "The Development of the Icelandic Fishing Industry 1900-1940 and its regional implications" and "Sjávarútvegur Íslendinga á tuttugustu öld"

84 Jónsson, Sigfús. "The Development of the Icelandic Fishing Industry 1900-1940 and its Regional Implications" PhD. dissertation, University of Newcastle upon Tyne, published in 1981 by the Economic Development Institute, Reykjavík, page 85

85 Árnason Ragnar, "The Icelandic fishing industry: Changing structure and performance," A Report for Task Force on Northern Cod, Second draft, May 1990.

Ragnar Árnason, discerned three major investment phases during the period after the World War II. The first was from 1946-1949, when there was a big investment in deep-sea trawlers and small multipurpose vessels. The second investment phase from 1956-1967 was chiefly in deep-sea trawlers as a result of the industry's desire to exploit newly developed refish fisheries off Greenland and Newfoundland and also in the later part of the period in herring purse seiners. The third investment phase began in the early 'seventies in the wake of extension of the fishing limits and lasted until the end of 'eighties.

86 "Fjárhagsleg aðstoð sveitarfélaganna við atvinnulífið á árunum 1987-1991" Samband íslenskra sveitarfélaga, Skoðannakönnun 26. júní 1992.

87 Árnason, Ragnar, The Icelandic fishing industry: Changing structure and performance. A Report for Task Force on Northern Cod, Second draft, May 1990.

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- 88 Researches by all the following economists and natural scientists have demonstrated convincingly the excess capacity of the Icelandic fishing fleet.
- a) Arnason, Ragnar, (1984) , Efficient harvesting of fish stock: The case of the Icelandic demersal fisheries, unpublished Ph.D. dissertation (University of British Columbia)
- b) Hannesson, Rognvaldur, (1974), Economics of Fisheries: Some Problems in Efficiency (Studentlitteratur, Lund,)
- c) Helgason, Thorkell and Ólafsson Snjólfur (1988), "An Icelandic fisheries model" European Journal of Operational Research 33, pp.191-199.
- 89 Helgason, Thorkell. "The Icelandic Quota Management System. A Description and Evaluation." Nar fisken svikter. Nord Refo, Nordisk Institut for Regionalokonomisk Forskning, Academic Press , Copenhagen, Denmark,1991.
- 90 Ministry of Fisheries in Iceland. A memo from the Minister of Fisheries to the Icelandic Government in 1991. (unpublished)
- 91 The Ministry of Fisheries argues that figures showing the size of the fishing fleet have been over-estimated since 1984, because there exists a gap between the effective fishing fleet, which includes vessels which are actively fishing, and the registered fishing fleet which composed of all vessels holding a fishing permit. Ministry of Fisheries in Iceland. A memo from the Minister of Fisheries to the Icelandic Government in 1991. (unpublished)
- 92 Magnússon, Jón R. "The Fish Meal and Oil Industry in Iceland" Paper presented at the 30th Annual Conference of The International Association of Fish Meal Manufacturers, Reykjavík, September 1990.
- 93 Jónsson, Sigfús. "Sjávarútvegur Íslendinga á tuttugustu öld" Hið íslenska bókmenntafélag, 1984. page 158
- 94 Ibid, page 166
- 95 Ibid, page 168
- 96 Jónsson, Sigfús, "The Development of the Icelandic Fishing Industry 1900-1940 and its Regional Implications" PhD dissertation, University of Newcastle upon Tyne, published by The Economic Development Institute, Reykjavík 1981
- 97 Árnason, Ragnar. "The Icelandic Fishing Industry: Changing Structure and Performance." A Report for Task Force on Northern Cod. Second draft, May 1990.
- 98 Magnússon, Jón R. "The Fish Meal and Oil Industry in Iceland" Paper presented at the 30th Annual Conference of The International Association of Fish Meal Manufacturers, in Reykjavík, September 1990.
- 99 According to Regulations Concerning Commercial Fisheries in Iceland from 1 September 1992 to 31 August 1993, issued by the Ministry of Fisheries on the 28th of July 1992. each individual quota for different species, granted to a vessel is converted to a unit of cod equivalent for the purpose of calculating the amount of quota a vessel is allowed to transfer to another vessel. Cod equivalent coefficients are calculated for all the species which catching is restricted by law. The conversion coefficients for the fishing year 1992/1993 are as follows: Cod = 1.0, Haddock = 1.15, Saithe = 0.54, Redfish = 0.41, Greenland halibut = 0.70, Plaice = 0.72, Capelin = 0.05, Herring = 0.09, Lobster = 11.7, Scrimps = 0.95, Scallops = 0.39
- 100 Calculated from Table 9 in Útvegur 1990, Fiskifélag Íslands, Reykjavík, July 1991.

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- 102 Jónsson, Sigfús. Sjávarútvegur Íslendinga á tuttugustu öld Hið íslenska bókmenntafélag, Reykjavík, 1984, page 175
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- 105 Young, James A. "Marketing in a Dynamic Environment: an Overview of the UK Fish Processing Industry" Food Marketing 3.1
- 106 Gunn, E.A., Millar, H.H., Newbold S.M. "Planning harvesting and marketing activities for intergrated fishing firms under an enterprice allocation scheme" European Journal of Operational Research 55 (1991) 243-259, North - Holland.
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- 108 Jónsson, Sigfús. "The Development of the Icelandic Fishing Industry 1900-1940 and its Regional Implications" PhD dissertation, University of Newcastle upon Tyne, published by the Economic Development Institute, 1981, page 155
- 109 Information received on telefax from the Ministry of Fisheries, (GPé) 16. September 1992 at 15:18 pm.
- 110 Fiskifélag Íslands, Ægir. 1908, page 75
- 111 The changes which took place in the fresh fish supply situation in the U.K. market in the 1980s, where an increased proportion of the fish supply was sourced from outside the U.K., particularly countries like Iceland, Norway and Denmark, are outlined by Sarah Maddock in, Fresh Fish Distribution in the UK: the Function and Future of Inland Wholesale Markets, Unpublished Phd thesis, Huberside Polytechnic in collaboration with the SFIA, December 1991, Chapter 2.
- 112 Magnússon, Jón Reynir. "The Fish Meal and Oil Industry in Iceland" Paper presented at the 30th Annual Conference of The International Association of Fish Meal Manufacturers. Reykjavík, September 1990.
- 113 Ibid
- 114 Torfason, Högni. Saga lagmetisíðnaðarins. Sölustofnun lagmetis, Reykjavík 1988.
- 115 Ibid
- 116 Jónsson, Sigfús. Sjávarútvegur Íslendinga á tuttugustu öld Hið íslenska bókmenntafélag, Reykjavík, 1984, page 185
- 117 Valdimarsson, Grímur, "Greatly Improved Utilization of Fish" Icelandic Fisheries '92-'93, Fróði hf. 1992.

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- 118 Árnason, Ragnar. "The Icelandic Fishing Industry, A Descriptive Account" Nar fisken svikter, Nord Refo, Nordisk Institut for Regionaløkonomisk Forskning, Academic Press, Copenhagen, Denmark, 1991. page 28
- 119 Valdimarsson, Grímur. "Greatly Improved Utilization of Fish" Icelandic Fisheries '92-'93, Fróði hf. 1992.
- 120 This is calculated from Útvegur 1980 and Útvegur 1990. These publications list the number of processing firms buying fish for processing, whether it is from own vessels or on an arm's length basis i.e. from vessels which have no direct connection with the processing firm. At 1980 the number of processing firms buying fish for processing was 177 but at 1990 they had increased up to 409.
- 121 "Íslenskur Þjóðarbúskapur og evrópska efnahagssvæðið," Þjóðhasstofnun, September 1991, page 23.
- 122 Níelsson, Gunnar. estimated the supply elasticity for salted fish exported from Iceland to the main saltfish markets in the Mediterranean to be 0.69. "Saltfiskframleiðsla á Íslandi og útflutningur saltfisks frá Íslandi." Unpublished Cand-Ocean thesis, Háskóli Íslands, 1989.
- 123 Felixson, Tryggvi, et al. "An Econometric Model of the supply and demand for Frozen Icelandic groundfish products in the USA." Working paper, Háskóli Íslands, 1991.
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- 125 Magnússon, Jón Reynir. "The Fish Meal and Oil Industry in Iceland" Paper presented at the 30th Annual Conference of The International Association of Fish Meal Manufacturers. Reykjavík, September 1990.
- 126 Ibid
- 127 A common categorisation of the fish processing industry is into primary processing, and secondary processing. In the U.K. the third type of processors have been defined as : merchant processors. See: MacKay, John. "A detailed look at the fishing industry in the United Kingdom." EUROFISH conference 23 & 24 April 1991, London
- 128 Fish caught in gillnets is usually perceived as being of inferior quality to fish caught by longline, handline and trawl. Introduction of the quota system has led to more emphasis by fishermen and vessel owners on the quality of the fish which is caught.
- 129 Kristgeirsson, Sigurgeir B. "Framboð ísaðs bontnfisks frá Íslandi" Unpublished Cand-Ocean, thesis, Háskóli Íslands, 1991.
- 130 Pearce, David W. The Dictionary of Modern Economics, MacMillan Press, London, 1983.
- 131 Buckley, Peter J. "Foreign Direct Investment by Small and Medium sized Enterprises: The Theoretical Background." The Internationalisation of the Firm. Academic Press, Harcourt Brace Jovanich Publishers, 1993.
- 132 Buckley, Peter J., Ghauri, Pervez N. The internationalisation of the Firms. Academic Press, Harcourt Brace Jovanich Publishers, 1993.

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- ¹³³ In this dissertation, the terms: "big sales organisations" , "the main export organisations" or " principal export organisations" are used when I am referring to two or more of the following firms: S.H. S.Í.F., Í.S., S.L., Síldarútvegsnefnd.
- ¹³⁴ Jónsson, Sigfús. "The Development of the Icelandic Fishing Industry 1900-1940 and its Regional Implications" PhD dissertation, University of Newcastle upon Tyne, published by the Economic Development Institute, 1981,
- ¹³⁵ Icelandic Ministry of Trade, "Guidelines for the issuing of Export Permits, 1978" and Ministry of Foreign Affairs, "Notes about Export Permits" 29, August, 1989
- ¹³⁶ Act No. 62 21 st of April 1962.
- ¹³⁷ Law nr. 62 / 1962 and law nr. 54 / 1968, Stjórnartíðindi
- ¹³⁸ Jónsson, Sigfús. "The Development of the Icelandic Fishing Industry 1900-1940 and its Regional Implications" PhD dissertation, University of Newcastle upon Tyne, published by the Economic Development Institute, 1981, page 174
- ¹³⁹ Kristgeirsson, Sigurgeir B. " Icelandic Foreign Direct Investment: A Case Study of the Fish Industry" Unpublished MSc thesis, The University of York, Department of Economics and Related Studies, 1992.
- ¹⁴⁰ Few other companies did obtain "Export Permits" for frozen fish products to the U.S. market, during the 1970s and 1980s , such as "Icelandic Sales Agency Ltd" which exported frozen groundfish products and few other firms which were exporting frozen scallops.
- ¹⁴¹ Síldarniðursuðuverksmiðja ríkisins but later i.e. after 1972 the name was changed to SIGLO
- ¹⁴² Law nr. 48/ 26. May 1972
- ¹⁴³ Torfason, Högni. Saga lagmetisiðnaðarins, Sölustofnun lagmetis, 1988
- ¹⁴⁴ By law nr. 58/4 June 1981, Sölustofnun lagmetis was granted the sole right to sell and export canned products to countries where the State was the main buyer. In the beginning when Sölustofnun lagmetis established, the markets in East Europe were the biggest markets for canned fish products from Iceland and in 1981 about 40% of the total exports of canned fish products was exported to the markets in East Europe. In 1985 the share of the East European market was about 20% and EEC market had become the biggest market, receiving about 60% of the total exports. By the law of 1981 the State representatives were removed from the board of the Organisation and a special reserves fund was established. Voting power was based on each member's share in the total exports value as it had been in the previous year.
- ¹⁴⁵ Ólafsson, Björn. Interview 19.05.1992. Sölustofnun lagmetis merged with another company in 1992: Marfang. The new company has been named: Ísenskt Marfang. The company intends to sell its products under the label "Icelandic Waters" which was the brand name used by S.L.
- ¹⁴⁶ SDR which is a abbreviation of Special Drawing Right is the International Monetary Fund's official unit of account.
- ¹⁴⁷ During the undertaking of this research the author made serious attempts to get information about the number of firms exporting marine products from Iceland, each year during the 1980s. Unfortunately, no such statistics were available or obtainable from the various government bodies in Iceland.

¹⁴⁸ Calculated from Útvegur, 1985, 1989, 1991. Fiskifélag Íslands.

¹⁴⁹ Ibid

¹⁵⁰ No official statistics are available in Iceland for the volume and value of exporting of cod liver oil for human consumption in consumer packaging.

II. Literature Review

4. Export Behaviour of Firms - A Literature Review

Introduction

Export behaviour has provoked a wide range of debate from a variety of perspectives, ranging from discussions on the supply side of international trade¹ to the human aspects of export behaviour,^{2 3} export decision making and organisational determinants of export behaviour.⁴ Whatever is the right perspective on this so widely used concept, two things are clear: first we are dealing with a heterogeneous rather than a homogeneous group of firms as Cavusgil⁵ claimed; and second, as Kaynak and Kothari⁶ claim "that studies of export marketing phenomena in different social, cultural, economic, political and institutional settings can provide improved understanding of the export behaviour of firms in a different environment."

The main objective of this chapter is to review the literature on export behaviour of firms, to provide a theoretical background to the empirical investigation undertaken in chapters: 5, 6, 7, and 8.

The chapter examines five emergent themes within the export literature: internationalisation process of the firm; incentives and barriers in exporting; management characteristics; exporters/importers relationship and; factors affecting the export performance of companies. Additional review, of the literature are provided by Bilkey 1978⁷, Dichtl et al. 1984⁸, Miesenbock 1988⁹ and Aaby and Slater 1989¹⁰

4.1. Internationalisation of Firms

"Internationalisation" is a term widely used in the export literature, although there appears to be no common definition of its meaning. Welch and Luostarinen¹¹ defined the term of internationalisation as "the process of increasing involvement in international operations", and dependent upon, developments along the following dimensions: operation method; sales objects; target markets; organizational capacity;

personnel; organizational structure; and finance. The following sections sets out the two main streams of theories on firms internationalisation process.

4.1.1. Export Innovation

Entry into the export market, just like the adoption of a new production process, can be considered an innovation within the closed environment of the firm.¹² A study by Simmonds and Smith's¹³ in Great Britain, which was based on examination of nine firms in the U.K. that began exporting between 1960 and 1967, was the first study to look at adoption of exporting from the perspective of innovation. In their study the first export order was taken as the prime evidence of innovation and the research concentrated on tracing this first export order, identifying the situation leading up to it and the characteristics of the persons involved. Their first hypothesis that the innovation (the first export order) would be generated within the firm was rejected, because in six of the nine companies the first export order was generated outside the firm. This meant that the innovations could not be explained simply by references to the situation within the firms, rather it had its sources outside the firm. Simmonds and Smith stressed the importance of "change agents" in initiating the innovation (export). One example of such a "change agent" might be hiring "foreign nationals to identify products they could sell in their home markets and to place orders accordingly, rather than attempting impersonal persuasion of laggards or great efforts to make the innovation easier." Their second hypothesis concerned the innovator, i.e. the person within the company who was responsible for the first export decision. Their main findings were that these persons (the innovator) had all travelled extensively abroad and that "promotion of internationalism was likely to be more effective in stimulating new export than a strategy of appealing to nationalistic motives." The third main focus in Simmonds and Smith's study was on the experience of the innovators, i.e. whether or not these persons had been active in exporting previously. In all the three

cases where, the innovation (the first export order) was generated inside the company, the innovating entrepreneurs had no experience in exporting and were therefore not transferring experience of exporting from other situations. However, what they displayed, and was well supported in their study of the characteristics of the innovating persons, was "enterprise," implying a high degree of risk tolerance, aggressive drive, and profit motivation. The final measurement in their study of the adoption of export as an innovation concerned the policy orientation within these companies. Contrary to their expectations, most of the companies investigated in their study were sales rather than marketing orientated. The main weakness in Simmonds and Smith's study remains their small sample size. Some of their findings may also be less relevant today, due to changes in the national and international trading environment, most notably changes in communication and transport and the greater awareness of consumers power. Like Simmonds and Smith, Lee and Brasch¹⁴ emphasised in their study the activity of various "change agents" (government agencies, banks, and other export agencies) in initiating the adoption of exporting, among the firms they researched. Their study also indicated that firms did usually not collect much information in either quantitative or qualitative sense before the export adoption decision was taken. Reid¹⁵ conceptualised in his article a five stage hierarchy model explaining the impact of the "decision maker" on foreign entry and export expansion behaviour. The five constructs in his model (Figure 4.1.) were export awareness, export intention, export trial, export evaluation and export acceptance. These are simple re-constructions of the relevant factors intended to describe the export expansion process of firms modelled in the diffusion of innovation process.

Figure 4.1.

Export Behaviour as an Adoption of Innovation Process

	Stage 1 Export Awareness	Stage 2 Export Intention	Stage 3 Export Trial	Stage 4 Export Evaluation	Stage 5 Export Acceptance
Export Adoption	problem or opportunity recognition, arousal of need	motivation, attitude, beliefs, and	personal experience from limited exporting	results from engaging in exporting	adoption of exporting or rejection
Decision Maker	past experience export-related or not; type, level, & amount of foreign information exposed to, and associated individual characteristics, unsolicited foreign orders	expectations from entry into foreign market orientation, export orientation, and underlying attitudes toward foreign involvement	sought foreign orders through search of foreign markets	profitability, sales stability	export expansion activity by continued export growth as; 1) increased export as a percentage of sales; 2) continued entry into new markets; 3) continued absolute export growth; 4) continued introduction of new products into export markets.
Variables involved					
Firm	past firm performance, reputation, and visibility	managerial goals and existing firm resources	unsolicited foreign orders existence of available managerial and financial resources	results from engaging in export behaviour	
Variables involved					

Source. (15) Reid

Dichtl et al.¹⁶ in their attempt to construct a model which explains the export decision process, use a version of the innovation-adoption model as one of three levels which they outlined in their article to describe commencement of export activity. Neither Reid or Dichtl et al. made any attempts to test their models empirically. Lim et al.¹⁷ however, in a recent study empirically tested export behaviour as an innovation-

adoption decision, using a synthesis of Reid, Robertson¹⁸ and Harvey¹⁹ models. The Lim et al. model consisted of four hierarchical constructs, awareness, interest, intention and adoption, each construct explained by multiple indicators (variables). Their research, a questionnaire survey, was based on a sample of 438 companies within three industries in Ohio state in the U.S.. The results provided strong empirical support for their model in general. Strong direct effect of interest on intention was found, but the direct effects of awareness on interest and of intention on adoption were found to be relatively weak. The assumptions which the authors made from these were that this was mainly due to psychological barriers perceived by managers of small firms. (Most of the companies included in final sample were relatively small with 97.7 per cent employing less than 250 employees).

4.1.2. Models of Step-wise Export Development

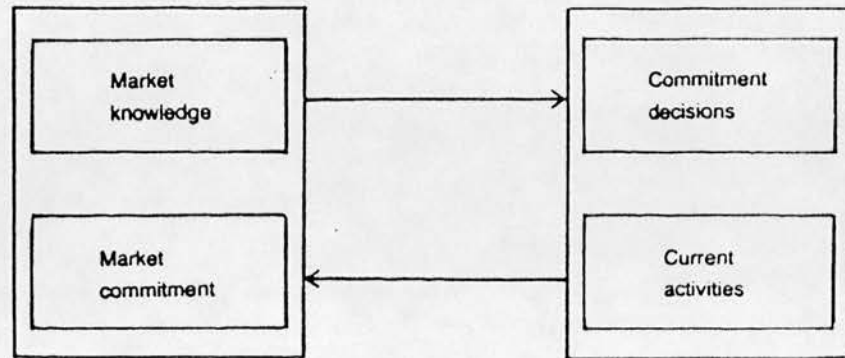
The three main models, by Johanson and Vahlne,²⁰ Cavusgil,^{21 22} and Bilkey and Tesar,²³ are all derived from innovation adoption models. The fourth model also introduced, is the "network model" which was developed by a group of Swedish researchers.²⁴ Johansson and Vahlne's model of the internationalisation process of firms was partly based on the findings made by Johanson and Wiedersheim-Paul in their analysis on the internationalisation of four Swedish firms.²⁵ The basic assumption which Johanson and Wiedersheim-Paul made in their study was that a firm only becomes international after it has developed in the domestic market. This happens as a consequence of a series of incremental decisions, where the most important obstacles to internationalisation are lack of knowledge and resources. In this relation they introduced the concept of "psychic distance," defined as factors preventing or disturbing the flows of information between firm and market. As an example of such factors the authors mentioned factors such as language, culture, political systems, educational level, level of industrial development, and so on. These

obstacles to internationalisation are reduced through incremental decision-making and learning about the foreign markets and operations. The perceived risk of market investments decreases and the continued internationalisation is stimulated by the increased need to control sales and the increased exposure to offers and demands to extend the operations. The lack of knowledge about foreign countries and a propensity to avoid uncertainty means that the firm starts exporting to neighbouring countries that are comparatively well-known and with similar business practices. The firm also starts selling abroad via independent representatives, as this means a smaller resource commitment than the establishment of a sales subsidiary and the step-wise extension of export operations proceeds through four different stages. 1) No regular export activities. 2) Export via independent representatives (agent). 3) Sales subsidiary. 4) Production/manufacturing. The main results from Johanson and Wiederheims Paul analysis indicated that the four Swedish firms (Sandvik, Atlas Copco, Facit, Volvo) followed the hypothesized order of development, i.e. from no regular export to independent representative, then to sales subsidiary and finally to manufacturing. Their concept of psychic distance seemed to fit the proposed hypothesis, though there were some differences between the firms studied. "Later research from other countries have reported empirical observations in support of or consistent with the model and overall the model has gained strong support in studies of a wide spectrum of countries and situations"²⁶ Holz Müller and Kasper's²⁷ study attempted to measure the perceived psychic distance by 103 Austrian managers in accordance with the subjectively perceived distance. For measurement purposes, Germany was pre-positioned as the closest country in subject terms. Their results showed that there was significantly less volume of export from Austrian companies to countries which the managers perceived in great psychic distance. Younger managers in the study also showed some less psychic distance. They concluded that "psychic distance is a soft indicator which does not overrule such hard facts as, e.g., the

superiority of products and prices. Only in situations where a company does not offer these clear advantages the psychic distance may be a decisive criterion." The Johanson and Vahlne model of internationalisation (some times referred to as the Scandinavian model of internationalisation) makes same assumptions as the Johanson and Wiedersheim-Paul model. The two main elements in Johanson and Vahlne's model (Figure 4.2.) are "state aspects" and "change aspects." The state aspect incorporates the company resource commitment to the foreign markets and company knowledge about foreign markets and operations. According to Johanson and Vahlne the more specialised the resources are to the specific market the greater the degree of commitment. In their model Johanson and Vahlne make a distinction between what they call "general knowledge" and "market-specific knowledge." General knowledge embraces things like marketing methods and common characteristics of certain types of customers, irrespective of their geographical location. Market-specific knowledge, relates to knowledge about specific markets such as market system, characteristic of the individual customers, etc. Change aspects relates to decisions to commit resources and the performance of current business activities. The model also makes the assumption that the main objective of the firm is to increase its long-term profit, which is assumed to be equivalent to growth and with the firm striving to keep its risk at a low level.

Figure 4.2.

**The Basic Mechanism of Internationalisation -
State and Change Aspects.**



Source
(20) Johanson and Vahlne

A number of studies have been undertaken to test Johanson and Vahlne's theory. Sullivan and Bauerschmidt²⁸ studied a sample of companies in the forest industry from four European countries. Despite some methodological shortcomings of their study they raised interesting points for debate about Johanson and Vahlne's thesis. Among the points which the authors felt might have introduced some bias into their research was the nature of the industry concerned, which they described as an industry with a common philosophy of "export or die". The results from their study failed to support Johanson and Vahlne's thesis of internationalisation. They raised questions over the representativeness of Johanson and Vahlne's theory outside the Scandinavian countries because of the repeated use of Scandinavian firms in testing it and reports that national cultures moderated the management process. Millington and Bayliss²⁹ in their investigation on the relationship between international experience, strategic planning and the decision to invest in foreign market, found little support for Johanson and Vahlne's theory. They used a sample of 50 U.K. manufacturing PLC parent companies in relation to 50 of their EEC joint ventures and subsidiaries in EEC countries outside the U.K.. One of their critiques about Johanson and Vahlne's model is the lack of attention of "formal strategic planning" and systematic appraisal of

alternatives implicit in it. Therefore they proposed that the introduction of formal planning and international experience into the analysis of internationalisation would mean that firms with international experience and/or formal planning systems may bypass the incremental process of internationalisation. A strictly incremental model of internationalisation might therefore, not apply. They proposed three possible strategies to describe the relationship between planning, previous experience in the market, and the investment decision to establish an operational unit abroad: planned, organic and opportunist strategies. They found that in the early stages of international development, firms depends more on market experience and incremental adjustment, which means that organic and opportunist strategies are more likely to explain the investment decision to establish an operational unit abroad. "As the degree of international experience increases, this process is superseded by formal planning and systematic search. In the final stages of development international experience may be transferred across markets and between products, thereby enabling firms to leap-frog the incremental process within markets."³⁰ Juul and Walter's³¹ study on the internationalisation experience of 12 Norwegian companies in the U.K. gave general support to Johanson and Vahlne's theory. They claimed relatively little "physic distance" between Norway and the U.K. and identified the "bridging role" which some of the U.K. based subsidiaries played in gathering and processing information on third country markets in addition to the U.K..

The second main model of internationalisation is Cavusgil's³² study which involved interviewing 70 manufacturing companies from Wisconsin and Illinois. It revealed the importance of information acquisition during the internationalisation process of firms. Cavusgil claimed that as a company progresses through the internationalisation stages it is more likely to use a variety of information sources in foreign market research. He attempted to draw up the main differences among exporting firms according to their degree of internationalisation by categorizing them into three groups: "experimental

exporters," "active exporters" and "committed exporters" (Figure 4.3.). Experimental exporters are those who exert little commitment to overseas market development. Short term objectives usually prevails over long-term goals and export sales most often play a minor role in the company's activity. Active exporters are those exporters who realise the importance of pursuing a special marketing strategy in their overseas markets. Export activity is no longer considered as a marginal business and it's conducted on a regular basis. Committed exporters search for business opportunities world-wide, not restricting themselves to the traditional markets. At this stage firms usually have set up sales subsidiaries abroad or invested in production facilities and so on. The main results from Cavusgil's study showed that there was a tendency for larger companies to have progressed further along the internationalisation process, but that experience in exporting was not a good predictor of internationalisation. He also found that firms with a higher degree of internationalisation were more likely to have a special export division and to put more emphasis on foreign market research. Rao and Naidu,³³ in their study of 777 Wisconsin firms, supported Cavusgil's findings that larger companies have progressed further along the internationalisation process, and furthermore, that there existed identifiable stages in firm's internationalisation and that firms in each stage share some common characteristics in organisational and marketing strategy variables. The four stages identified by Rao and Naidu were: 1) Nonexporters - companies not involved in any exporting activity or indicated any future interest in exporting; 2) Export Intenders - companies currently not exporting, but would like to explore export opportunities; 3) Sporadic Exporters - companies exporting on a sporadic basis; 4) Regular Exporters - companies exporting on a regular basis.

Figure 4.3.

Stages in the Internationalisation Process of the Firm

The INTERNAL AND EXTERNAL VARIABLES help explain why a firm may engage in a	CRITICAL ACTIVITY which is unique to various.....	STAGES
Inhibiting firm characteristics	Preoccupation with the home market	DOMESTIC MARKETING
External stimuli Unsolicited orders Change agents Internal stimuli Differential advantages and conducive characteristics Decision-maker characteristics International orientation	Deliberated search for information and preliminary evaluation of the feasibility of undertaking international activity	PRE-EXPORT STAGE
Perceptions regarding attractiveness of international marketing activity	Initiation of limited international marketing activity	EXPERIMENTAL INVOLVEMENT
Experience-based expectations. Availability of key resources. Willingness to commit resources	Systematic exploration of expanding international marketing activity	ACTIVE INVOLVEMENT
Marketing performance Performance in overcoming Barriers	Resource allocation based on international opportunities	COMMITTED INVOLVEMENT

Source

(22) Cavusgil, Tammers S.

The third main model of internationalization by Bilkey and Tesar,³⁴ comprises six development stages, from conditions where there is no interest in exporting at all within firms, to conditions where the management of firms explore all feasibilities of exporting to additional countries that, "psychologically" are further away. The six stages in Bilkey and Tesar's model are:

1. Management is not interested in exporting; would not even fill an unsolicited export order
2. Management would fill an unsolicited export order, but makes no efforts to explore the feasibility of exporting.
3. Management actively explores the feasibility of exporting.
4. The firm exports on an experimental (trial test) basis to some psychologically close country.
5. The firm is an experienced exporter to that country and adjusts exports optimally to changing exchange rates, tariffs, etc.
6. Management explores the feasibility of exporting to additional countries that psychologically, are further away.

Bilkey and Tesar's³⁵ study was done among 423 small and medium sized firms in Wisconsin and focused on the last three stages of the model. The main findings from their research showed, like previous research by Simmonds and Smith,³⁶ that the most decisive factor of whether or not firms entered stage four in the export process was the receipt or non-receipt of an unsolicited export order, but there after the quality and dynamism of the firms management was the most determinant element. Barriers to exporting also showed to vary according to different stages. Joynt³⁷ by investigating the export behaviour of 85 Norwegian firms found support for Bilkey and Tesar's theory. Different from their study, which found the receipt of unsolicited order as the critical factor whether firms entered into exporting or not, Joynt found that there were multiple reasons behind such a decision. Among the reasons he found factors such as availability of unutilised production capacity and increased competition in domestic markets.

The fourth model introduced, is the "network model" developed and primarily pursued by a group of Swedish researchers.³⁸ The basic assumption in the network model is that activities in production and distribution systems are interlinked and coordinated by networks of relationships between firms. Internationalisation of firms within the 'network model' is accomplished through: 1) establishment of positions in relation to counterparts in national nets that are new to the firm, i.e. international extension; 2) developing positions and increasing resource commitments in those nets abroad in which the firm already has positions, i.e. penetration; and 3) increasing co-

ordination between positions in different national nets, i.e. international integration. According to Johanson and Mattsson³⁹ the various production nets can be differently internationalised as well as the markets. The internationalisation development of firms is therefore dependent on various firm and market characteristics. According to the network model firms are faced with four types of situations in their internationalisation. (Figure 4.4.)

Figure 4.4.

Internationalisation and the Network Model.

		Degree of internationalisation of the market (the production net)	
		Low	High
Degree of internationalisation of the firm	Low	The Early Starter	The Late Starter
	High	The Lonely International	The International Among Others

Source

(39) Johanson and Mattsson

The "early starter" has few and rather unimportant relationships with firms abroad and the same holds for other firms in the production net. Initiatives in the early internationalisation of the firm are often taken by counterparts such as distributors or users in the foreign market. The "lonely international" is a firm which is highly internationalised while its market environment is not. These firms may in some cases enjoy advantages because of their early development of network positions compared to their competitors. The "late starter" is a firm which enters highly internationalised foreign markets late. According to Johanson and Mattsson, firms size is a important factor for "late starters" and these firms often have to be more specialised and have

greater customer adaptation abilities than for example the "early starter." The "international among others" applies when both the firm and its environment are highly internationalised and further internationalisation only means marginal changes in extension and penetration. In a study by Mattsson et al.⁴⁰ of international networking strategies in European food production and distribution, they focused on network developments and on the networking strategies of individual firms on producer and distributor levels within Europe. According to their analytical approach, the production and distribution systems, which comprises activities needed to transform all the inputs to primary production into the total assortment of products for final consumption, consists of four different levels, two on the production level and two on the distribution level. The production levels are 'primary production' such as refining and packing of the immediate outputs from local agricultural production and secondary production of more processed food products with less share of inputs coming directly from local agricultural. The distribution levels are firstly, wholesale firms or international trade agents and secondly, retail stores. The efficiency of the 'network system' (productivity) and effectiveness (customer satisfaction, adaptability, and innovativeness) is largely dependent on the level of coordination between firms in the network, but cooperation and competition are the two main factors serving the coordination mechanisms. In one of their study examples Mattsson et al.⁴¹ described some of the complications for co-operatives, when internationalising is the interests and opinions of the owners (participants in the association/co-operative), but which they stated, "might not be congruent with a business-like attitude when expanding the activities." This relates to some of the issues raised by Lorange⁴² in his assessment of planning and control in cooperative networks. According to Lorange it frequently happens, "because of many members being shielded from the market, that co-operative networks may tend to underestimate the growth potential of the final product/market niche. Often only the member of the co-operative organisation

actually performing the selling function to the end-user can determine the attractiveness of the niche. There will be little or no feed-back to the other members of the co-operative venture, leading to a biased appraisal."⁴³ Lorange also claims that co-operative venture organisations tend to be sluggish in assessing competitor and customer responses as many executives usually need to be involved and that the ability to respond to such responses is too often tentative.

4.2. Incentives and Barriers in Exporting

Among the most interesting topics within the literature of export behaviour of firms, and closely related to the models on "export innovation" in Section 4.1.1., are questions which relate to the incentives and motivation for exporting. Similarly interesting are the obstacles or barriers which firms are confronted with or are perceiving under their considerations or executions of export. This section reviews the most common of motivational factors and incentives in exporting along with the major obstacles and barriers to exporting. It is important to realise that both the perceived and experienced obstacles or incentives are strongly correlated with personal characteristics.

4.2.1. Export Incentives

Some firms are pushed into exporting by an external change agent, some simply take advantage of export opportunities that come their way with no evident objective in mind, while others are motivated to initiate exporting deliberately.⁴⁴ The most common initiating factors have showed to be the receipt of unsolicited orders from foreign buyers,^{45 46 47 48 49 50 51 52} saturated home markets or intensifying competition.^{53 54 55 56 57} Katsikeas and Papalexandris⁵⁸ investigated what factors initiated or stimulated the involvement of 75 Greek food manufacturing firms into exporting. The four factors most highly rated by exporters as export stimulus were managerial beliefs about the importance of exporting, managerial export experience,

attractive profit and growth opportunities overseas, and possession of unique products. The two latter factors are consistent with earlier findings by Johnston and Czinkota⁵⁹ who found that profit advantage and unique products were the factors which most frequently motivated the firms they researched into exporting. Bilkey and Tesar⁶⁰ pointed out that different motivational and perceived barrier factors applied to firms at different export stages and that profit and growth expectations by the management of firms, especially at the earlier stages, of internationalisation were relatively unimportant. This is contrary to Cavusgil's⁶¹ findings, where the desire for profits and sales growth was cited as the major motivational factor for initial involvement in exporting. He also found that, "after the firms had become more involved in exporting, they appeared to be more interested in seeking profits and less interested in fulfilling other objectives." Similar results have been found by Czinkota and Johnston⁶², Kaynak,⁶³ Kaynak and Kothari,⁶⁴ Rabino,⁶⁵ Ogram,⁶⁶ Sullivan and Bauerschmidt⁶⁷ and by Simpson and Kujawa.⁶⁸ Other motivational or incentive factors related to firm's engagement in exporting have shown to be diversification as a way of achieving stability,^{69 70 71} underutilized production capacity,^{72 73 74 75 76 77} competitive strengths which could include unique skills, knowledge and products,^{78 79} and increased efficiency in transportation.^{80 81} In a case study of Israeli exporters of consumer goods to the U.K. Jackson⁸² revealed that in a large number of cases the most important force in bringing the potential⁸³ Israeli exporter to the point of success was the initiative taken by a British importer. Tesar and Tarleton⁸⁴ investigated the differences between two defined types of exporters, the "aggressive exporters" and the "passive exporters." Aggressive exporters they defined as those who sought their first export order and passive exporters as those who did not seek their first export order. The results from their study showed that the aggressive exporters tended to have higher sales volume, higher levels of employment and higher levels of investment. Their findings indicated also that the main initiating factors for exporting

among the aggressive exporters were unique product qualities, technological advantages and marketing and financial advantages. The main initiating factor for the passive exporters was, general inquiry from abroad.

There has been some research into the influence of various government programs on exporting, e.g. tax incentive schemes, export subsidies and services provided by various government bodies. The fundamental issue is the role of the government in encouraging and promoting exports. The Barclays Bank Report⁸⁵ found very divided opinions about this issue as most companies in France and Germany were strongly opposed to all government interference but, the U.K. exporters were more favourably disposed to such support and a high proportion used such government services. Various studies, such as by Albaum⁸⁶ and Reid,⁸⁷ have showed that there is frequently relatively little awareness among companies of what government programs are available and several other studies such as by Sullivan and Bauerschmidt⁸⁸, Tseng and Joseph Yu,⁸⁹ Rabino⁹⁰ and others^{91 92} have indicated relatively little importance and usefulness of government information, programs and incentives. Sheringhaus⁹³ argued that the three main objectives of government export marketing assistance programs should be: to place risks and opportunities of foreign market involvement into perspective; to stimulate a firm's interest in, and further its commitment to exporting; and, to act as an external resource to build knowledge and experience vital for successful foreign market involvement."⁹⁴ Bilkey and Tesar⁹⁵ emphasised the importance of designing government programs with respect to the different international stages companies are at. This was supported by Crick⁹⁶, who underlined, "that export promotional programs could be targeted more efficiently if channelled into areas that would help firms provide what importers actually want".⁹⁷ Ghauri⁹⁸ attempted to measure the effects of state subsidies on the export performance of smaller Norwegian firms. Due to some definition and measurement problems, Ghauri was unable to draw clear conclusions on the effects of state

subsidies on export performance. However, he showed that the number of times a firm had received a subsidy, was related to its export performance and that a single subsidy appears to have very little effect on export performance. In a previous study Grønnhaug and Lorentzen⁹⁹ attempted to measure the impact of governmental export subsidies on export activities of Norwegian firms. Their main revelation was that subsidies to specific activities leads to increased use of these activities, while general subsidies only affect the profit of the firms subsidised. They were however, unable to determine any definite impact of state subsidies on export activity. Furthermore, they revealed that there existed a gap between the perception of firms and governments in usefulness of the various export activities.

4.2.2. Barriers to Export

Barriers to exporting can be categorised broadly into two groups. Firstly, those barriers to exporting which are based on the perception of the decision-maker in the firm and secondly, those barriers which persist in the external environment such as government rules and regulations. Bilkey and Tesar¹⁰⁰ showed that firms who had obtained their own initial export order, perceived somewhat fewer barriers to exporting than the firms whose initial order was unsolicited. They also argued that the composition of the following perceived barriers to exporting tended to differ systematically by export stages. The further advanced the export stage, the greater the number of firms that perceived difficulty in understanding foreign business practices, different product standards and consumer standards in foreign countries, difficulty in collecting money from foreign markets, and difficulty in obtaining adequate representation in foreign markets, as barriers to exporting. A barrier which they found to differ inversely with export stage was difficulty in obtaining funds to start exporting. Cavusgil¹⁰¹ revealed that firms which he identified as "experimental exporters" have their main problems in dealing with foreign distributors. On the other

hand, those companies which he grouped as "active or committed exporters" faced their biggest problem to be fluctuations in the value of foreign currencies. Cavusgil argued that these findings were very natural as companies at the experimental stage have not committed sufficient resources to build up a strong distribution network abroad and that companies at the more advanced stages of the international development process are receiving a higher proportion of their total income from export sales and therefore more affected by currency fluctuation. Cooper and Kleinschmidt¹⁰² found that managers in companies which they identified as "world marketers" perceived fewer barriers to exporting than those who were marketing or selling to neighbour markets. Czinkota and Johnston¹⁰³ tested the hypotheses that there were no significant differences between small and medium sized firms in how they perceived problems associated with exporting. Using a sample of 135 medium-sized and 84 small-sized firms in the U.S., their results showed that the only significant difference, related to problems in handling documentation. The most important problems encountered by the sampling firms in their export activity, encompassed things such as communication, sales effort, gathering market information, obtaining financial information, information on business practices and providing technical advice and repair service. Rabino¹⁰⁴ identified five main factors of barriers associated with exporting operations, paperworks, selection of a reliable distributor, import duties and non-tariff barriers, honouring letters of credit, and communication problems. Perceived barriers to export were however stated by exporters to be lack of exposure to other cultures, large domestic market, lack of staff time, the paperwork associated with setting up an export operation, product modification in order to meet foreign safety and health standards. These findings are similar to those by Albaum,¹⁰⁵ who found that the most frequently mentioned problems perceived by smaller manufacturing companies exporting from the U.S. (Idaho, Oregon, Washington) were: lack of customer leads; competition in foreign

markets; locating overseas distributors; locating foreign markets; financing sales; and paperwork. Several other research such as by Axinn¹⁰⁶ and Ogram¹⁰⁷ have identified paperwork as an important barrier to exporting. Kaynak and Kothari¹⁰⁸ examined the types of problems faced by exporters in Nova Scotia and Texas. They found that in both countries government barriers were the most difficult to overcome. Competition in foreign markets and finding a reliable distributor also ranked high on the score sheet for export barriers. This factor was also perceived as problematic by Canadian exporters in a study by Kaynak.¹⁰⁹ The main barrier to export by the firms included in his study was shown however to be high production cost, which is in line with findings by Ghauri,¹¹⁰ who examined problems faced by smaller Norwegian firms in their export activities. Other important factors of export obstacles identified by Ghauri related to difficulties in sourcing finances and subsidies, adapting the products to different markets and building up a distribution network in foreign markets.

Bauerschmidt et al.¹¹¹ asked chief executive officers of strategic business units in 104 U.S. firms, that presently exported or contemplated exporting in the near future, to rank the importance of 17 potential barriers to their export activities. By using factor analysis Bauerschmidt et al. identified five underlying factors representing barriers to export. The most important factors were a high value of the U.S. dollar relative to foreign currencies (a high real exchange rate of the U.S.-dollar), and high transportation cost to foreign markets. Gripsrud¹¹² followed the method by Bauerschmidt et al. and examined the perceived barriers by the Norwegian exporters of fish and fish products to Japan. His results indicated that there were three principal factors representing perceived barriers to exporting. The first factor measured the price/quality dimension, the second factor measured the cultural dimension and the third factor measured the competition dimension. Furthermore, he was able to show that firm size, main product dried/salted cod, perceived price/quality dimension and perceived cultural dimension all discriminated between firms in terms of experience in

exporting or in terms of the management attitude towards future exporting. Gripsrud concluded that:

- 1) The larger the size of the company the more likely is it the company exports to Japan.
- 2) If the main product is salted/dried cod, it is less likely the company exports to Japan.
- 3) The fewer the price/quality and cultural obstacles perceived the more likely is it the company exports to Japan.

Dichtl et al.¹¹³ identified from their study of companies in West-Germany that the main export constraints perceived by the exporting companies were pricing, competitive situation and distribution systems. For the companies which the authors defined as "occasional exporters" the main constraints turned out to be pricing, competitive situation, personnel and language problems. Diamantopoulos et al.¹¹⁴ found the most important obstacles was location of foreign distributors, cultural differences and problems in working with distributors. In a similar study by Schlegelmilch et al.,¹¹⁵ found that the location of foreign distributors and exchange rate fluctuations were the two most important obstacles to exporting among the firms they investigated.¹¹⁶ Working with distributors was also perceived as an important obstacle to exporting. There were however, no significant differences in the perception of any of the analysed export obstacles.

4.3. Managerial Characteristics and Influences

A substantial body of the literature on export marketing and export behaviour has dealt with the human side of this diverse subject. Management characteristics in exporting and non-exporting companies, the export decision maker, management attitude towards exporting and management influences on export performance have received the most attention. Managerial and human factors play a major role in many

models of export behaviour and pre-export behaviour of firms.^{117 118 119 120 121}

Wiedersheim-Paul et al.¹²² stressed the importance of the decision-maker and how the environment of the firm and the firm itself affect the decision maker and vice versa. The interaction of these three factors is crucial in creating the perception of the decision-maker and his attitude towards exporting. The decision-maker characteristics, such as his past experience, and education play a vital role in Wiedersheim-Paul's model. Cavusgil and Nevin¹²³ applied empirical methods to measure internal determinants of export behaviour of companies, using a sample of 473 companies based in Wisconsin in the U.S.. Their main conclusions supported the contention that reluctance of firms to export may be largely explained by the lack of determination of the top management to engage in such activity. Of the four groups¹²⁴ of internal determinants which they maintained could explain export behaviour of firms, two of them were attributable to management characteristics. These factors were expectations of management and the strength of managerial aspirations. In another study using the same sample Cavusgil¹²⁵ concluded that "expansion of export activity among the firms studied was clearly related to the following factors: management's expectations concerning the effects exporting will have on firm's growth; market development and profits; technology orientation of the firm; management attitudes towards risk-taking; and desire to develop new markets and the extent of resource allocation to exporting."¹²⁶ Reid¹²⁷ examined the extent of information sought by the firms decision makers when entering into exporting. He suggested that decision makers in small firms "are behaving rationally and make selective use of institutions, facilities, and informal sources when making new market entry export decisions." Cavusgil¹²⁸ argued that at the experimental stage, top executives were more directly involved in all exporting decisions than the executives at the more advanced stages, and public information like industry/business publications and contacts at trade shows were the main source of information about

foreign markets. Furthermore, that the experimental firms have less often face-to-face contact with their foreign distributors than firms at the more developed stages, and make less use of primary information such as market research about foreign markets. As the firms however, develop through the internationalisation stages, foreign market research becomes much more important to them and they use more extensive sources of information.¹²⁹ Reid¹³⁰ argued that in choosing a set of foreign markets the foreign exposure of the decision-maker was likely to be critical in determining not only the size of various market sets but also their specific constitution. He also suggested that "decision-makers are likely to consider a rather limited number of foreign markets in planning their foreign market entry and where entry is unplanned or fortuitous, decision-makers are likely to respond positively to only those stimuli or foreign orders which come from markets to which they already have a favourable disposition."¹³¹ Bilkey and Tesar¹³² had previously found in their study that one of the most crucial determinants of whether or not firms entered into exporting on an experimental basis to some psychologically close country was the quality and dynamism of the firms management. Czinkota and Johnston¹³³ tested their hypothesis that there were no differences among the export attitudes held by the management of small and medium-sized firms using a sample of 84 small-sized and 135 medium-sized U.S. firms. Their results indicated no significant differences between firms of different sizes, even though in general, the management of medium-sized firms held slightly more positive attitudes toward exporting than did the management in smaller sized firms. Dichtl et al.¹³⁴ tested the construct "foreign market orientation" of managers in exporting and non-exporting companies in West-Germany and compared these with similar studies undertaken in Japan, South-Korea, Finland and South-Africa. The results from Dichtl et al. studies revealed the following;

- 1) Export managers in all the countries perceived less "psychic distance" than did the non-export managers.

- 2) The export managers in W-Germany and Japan were on the average younger than the non-exporting managers but the adverse was true for South Africa, Finland and South Korea.
- 3) The export managers in all the countries, except Japan had on the average a higher level of education than those who were non-exporters.

This gives some support to findings in other studies which have indicated that the educational level of export managers and decision makers is an important factor in various export decisions.^{135 136} The study indicated also that in all the countries the export managers possessed better command of foreign language than the non-export managers, had spent more vacations abroad than the non-export managers and in all countries except in South-Africa, they had stayed longer abroad in general than non-export managers. This is consistent with the findings by Simmonds and Smith¹³⁷ who found a significant over-representation of export innovators who were either born abroad or had experience from living abroad. In terms of subjective characteristics, the export managers in all the countries concerned, showed some more positive attitude towards risk (risk takers) than the non-export managers. They were less rigid, showed more willingness to change and were more optimistic about the outlook and personal future. Holzmüller and Kasper,¹³⁸ applied the conceptualisation devised by Dichtl et al.¹³⁹ and undertook a comparative study, using a random sample of 110 Austrian companies. Their results showed no significant deviation from the results obtained by Dichtl et al. for Germany, except for the respondents age and attitude toward risk where the hypothesis made by Dichtl et al. was rejected. The authors however, felt this deviation in the results was due to some methodological shortcomings. Roux¹⁴⁰ attempted to answer the question "to what extent does the manager's profile or the firm's previous export experience account for different types of behaviour?" He used semi-structured interviews to investigate his research issue, from a sample of nineteen firms in the South of France. Roux employed the

constructs "supra national outlook" versus "national outlook" used by Simmonds and Smith. He classified managers as internationally minded if foreign trade was perceived as a normal phase in the development of the firm and domestically minded if foreign trade was an additional activity and if the firm concentrated its efforts on the home market (French market). Roux identified two types of managers from his sample firms. Firstly, those who he called the "self-made-men" and are those who rely on highly centralized decision making for their export activity as well as for their sales on the domestic market and where the founder makes all decisions. For these managers, "control is the issue and keeping in touch with all parts of his business is the gratifying goal". Secondly, the "organised firms" where exporting is not as much a vital necessity as for the former group. The export decision in these firms is taken more as a result of an opportunity to enlarge the companies markets, frequently accompanied by the arrival of new managers who already have some export experience. These companies also make careful testing and feasibility studies of the impact which exports will make on the long term presence of the companies. Usually these companies sets up specific export departments. From these two types of managers Roux classified three groups of firms:

- 1) Firms which are domestic orientated and get gradually involved in exporting when they perceive a weakening home market;
- 2) International minded firms, those who look actively for foreign customers by frequently travelling abroad. Their experience stresses the importance of personal contacts, the value of face to face information on market potential and necessity of fast deliveries;
- 3) Firms which have competitive advantage on the French market and an international orientation take advantage of experimental exporting to gather informations on foreign market behaviour, test their products against those of competitors and gradually plan product and structure adaptation.

The main results from Roux's study indicated that "in most cases the manager's attitude towards risk is tied to his orientation. International orientation is associated

with risk preference, whereas domestic orientation is related to risk aversion."¹⁴¹ Turnbull and Welham,¹⁴² focused on the characteristics and quality of the export executive marketers in five European countries (Germany, French, Italy, Sweden, and Britain). By interviewing 407 export marketers from these countries the researchers revealed the following results: The export marketing staff dealing with exports markets in Europe have considerable work experience and in most cases have spent between five and ten years in other functions before being appointed to an export marketing position. A relatively low proportion of the export marketing executives had considerable experience from living abroad. This applied to all the European countries concerned, except W-Germany were about one-third of all the export marketers had lived and worked abroad for one year or more. The results indicated that a great majority of the export marketers in Germany, France, Sweden and the U.K. had some level of advanced training after leaving school. It was also the case that the French and U.K. marketers were more technically oriented in their educational training backgrounds but the Germans and the Swedish were more commercially oriented. The Italian marketers showed less formal higher level training, but on the other hand a relatively bigger proportion of them had university qualifications. In terms of language knowledge, the great majority of the European export marketers showed good skills in English both at technical and at social level.

4.4. Exporters - Importers Relationship

A number of studies in export marketing have revealed the lack of distribution networks and problems in selecting a reliable distributor as the chief obstacles in exporting.^{143 144 145 146} Overseas distributors play an important role for many manufacturers involved in international business, especially smaller firms and those relatively new to overseas trading.¹⁴⁷ Distribution channels in exporting and exporter-importer relationship have received increased attention within the export marketing

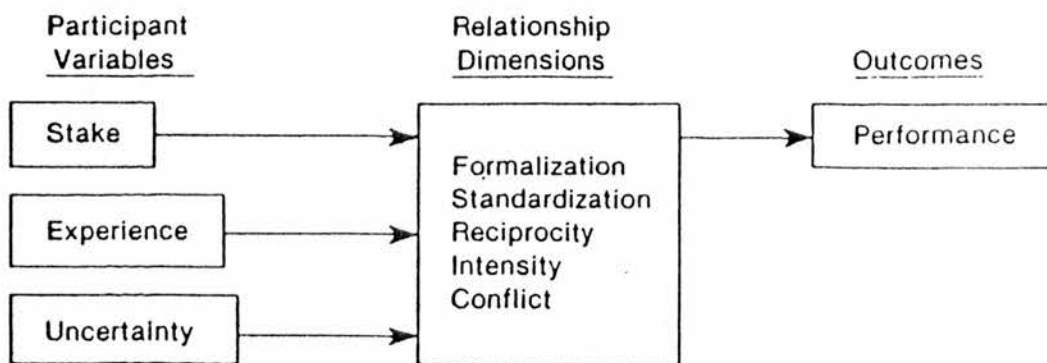
literature in recent years, particularly studies on the relationship between exporters from countries relying heavily on primary commodities exports and importers in developed countries.^{148 149 150} Leonidou¹⁵¹ claimed there were two major approaches in examining distribution channels, the economic and the behavioural. The former focuses on the "efficiency" aspects of the distribution channel, namely, costs, functional differentiation and channel design. The latter concentrates on the "behavioural" aspects of the relationship between members of the distribution system, such as power, conflict, co-operation and satisfaction. Most of the export marketing literature deals with the latter aspects of Leonidou's proposition.

By focusing on the long term demand - supply conditions in different world-wide markets for manufactured goods Frazier and Kale¹⁵² aimed to build a conceptual framework which explained how firms were likely to initiate, implement, and review channel relationships.¹⁵³ They argue that "gross generalisations about behavioural channel relationships across diverse economic-cultural environments is misleading."¹⁵⁴ According to them channel relationships will vary across countries based on environmental and cultural differences, such as whether there remains "sellers markets" or "buyers markets", the amount and nature of natural resources in a country, and population characteristics. From his analytical study, Frazier and Kale made eighteen propositions¹⁵⁵ about manufacturer-distributor relationships. They stressed the significant differences in the three above mentioned processes based on the nature of the market environment in different countries, and on several cultural and structural factors. Rosson and Ford,¹⁵⁶ examined the conflict in the export manufacturer - overseas distributor marketing channel. They were specifically interested in, how the export channel performance was affected by the level of conflict within the export channel and also how the manufacturers stake in the export relationship affected channel conflicts. Using a sample of nineteen Canadian manufacturing companies exporting industrial goods to the U.K. their results

indicated that low levels of conflict are associated with high performance and a moderate support was found between increased stake level¹⁵⁷ within export channels and decreased level of channel conflict.¹⁵⁸ In a later study of Canadian manufacturers and their U.K. distributors, Rosson and Ford¹⁵⁹ sought to address two research questions. First, what are the characteristics of the relationships between manufacturers and overseas distributors that are associated with high levels of performance?, and second, to what extent are the relationships between manufacturers and their overseas distributors shaped by certain characteristics of the two companies and their individual representatives? They used a conceptual model, showing the relationship between three components: participant variables (stake, experience, and uncertainty); relationship dimensions (formalisation, standardisation, reciprocity, intensity and conflict); and channel performance. (Figure 4.5.)

Figure 4.5.

**The Conceptual Model of Manufacturer-Overseas
Distributor Relations and Export Performance**



Source
(160) Rosson and Ford

Rosson and Ford's study found a strong positive relationship between contact intensity and performance. This the authors argued indicated the importance of closeness between exporter and distributor as a mean of reducing the distance

between these two parties. Adaptability in roles and routines to changes in the relationship was emphasised because standardisation showed some negative relationship with performance, confirming previous findings by Rosson and Ford of a positive relationship between export performance and low conflict. Formalisation in exporters-distributors relationships were related with high performance,¹⁶⁰ however, as stated by the authors "the majority of executives interviewed saw little real value in formal distributor agreements." As in previous research,¹⁶¹ Rosson and Ford did not find a significant relationship between stake and conflict and unexpectedly they found a negative relationship between stake and reciprocity, indicating that high stake companies confer power to their partner. Personal experience of the contact persons in the exporter-distributor dyad was shown to have positive effects on conflicts (less conflict) but the longer the key contact persons had been dealing with each other more loose the relationship became. This is in contrast to the findings made by Rosenberg and Stern¹⁶² on conflict in domestic distribution channel which showed that the longer the key contact person had been with their distributor or dealer firms, the higher the conflict was with the single manufacturer. Madsen,¹⁶³ revealed in his study that good personal contact and joint decision making with the channel members have a positive effect on export performance. On the other hand, Rosson and Ford's study revealed that greater corporate experience¹⁶⁴ was associated with more intense relations. In terms of uncertainty the study showed significant positive relationship with standardisation in the relationship which was contrasting to the hypothesis made by the authors. In another study, using the same sample Rosson and Ford¹⁶⁵ attempted to modeling the relationship between exporters and overseas distributors into five possible "states" of development:

1. New - relationship states where an agreement to work together has been made, but where there is little experience of interaction or transactions.

2. Growing - relatively new or well established dyads.
This simply means that reasonable growth has been achieved.
3. Trouble - a state where one may have experienced sales growth but where there is uncertainty for other reasons.
4. Static - this is a state where sales might show little variation from year to year because of lack of potential and/or because of an unwillingness of the parties to increase their stake in it.
5. Inert - relationships which can scarcely be justified even though, they still are in existence.

They assumed that the exporter/overseas-distributor dyad moved from being "new" toward being "inert". "Between this beginning point and end point, three relationship states are possible namely; growing, troubled or static." In the middle relationship period Rosson and Ford assumed that "any sequence of states might be experienced," and therefore, accommodating for fluctuations in the relationships. Moore,¹⁶⁶ adopted the framework made by Rosson and Ford¹⁶⁷ when researching the relationship of UK exporting manufacturers and their West-German agents and distributors. He showed that the manufacturers-overseas distributors relationships could fall into one of the five relationship development states defined by Rosson and Ford. Furthermore, his results indicated that the "new" development state could be subdivided into three categories of newness: 1) completely new - those cases where there had been no previous business relationship between the manufacturers and overseas distributors; 2) added - where there is a well established business between the manufacturer and the overseas distributors but additional activity requires the appointment of additional agents and distributors; 3) replacing - the replacement, by the manufacturer, of an existing agent with a new agent. Moore found that the troubled state, was categorised by high levels of conflict, uncertainty and dissatisfaction. He also found that this state was characterised by significantly higher number of products marketed through the agents and distributors. Leonidou's¹⁶⁸ attempt at conceptualising the behaviour of indigenous manufacturers of consumer

goods based in developing countries within their working relationship with import customers in developed countries. Leonidou based his research on a sample of 34 Cypriot exporters and 21 British importers of manufactured goods, using personal interviews and a semi-structured questionnaire to collect information. The results confirmed his first research hypothesis, which stated that the importer in a developed country exercises higher levels of power than the exporter from a developing country in a channel relationship. Leonidou explained this with a reference to a number of factors which he identified as strengths in the organisation of the importing firm opposed to the weaknesses he identified in the exporting organisations. Among these factors were larger size, financial situation, proximity to the market and back-up from other organisations. Leonidou found also that the level of power in the relationship between the British importers and the Cypriot exporters depended on the fact that the former operates in a buyers market and the latter in a sellers market and also that the Cypriot imports represented only a small portion of the total purchase by the British importers. These results are partly in line with the theory proposed by Frazier and Kale,¹⁶⁹ who claimed that when power in distribution channel relationships in sellers markets rests almost unilaterally in the hands of the manufacturer, the power becomes more balanced between manufacturers and distributors in buyers markets. The second hypothesis tested by Leonidou related to the level of conflict within the channel relationship between the developing country-based exporter (Cypriot) and the developed country-based importer (British). His study results indicated a very low level of disagreement in the exporter-importer dyad as a consequence of well-defined and well established relationships. These findings are consistent with the findings by Rosson and Ford, and to later findings by Katsikeas and Piercy.¹⁷⁰ The third hypothesis made by Leonidou, concerned the perceived low level of co-operation between the developing country-based exporter and the developed country-based importer. The findings showed that in most cases there was a mutual trust and

respect between the two parties and more noteworthy that, "in majority of cases, the business agreement between the two parties was said to be verbal." Like Leonidou, Katsikeas and Piercy¹⁷¹ researched the relationship between exporters from a developing country (Greece) and importers based in a developed country (the U.K.). They attempted to address the perceptual differences between the parties in the exporter-importer dyad, with respect of conflict. The main findings from Katsikeas and Piercy's study, showed that the relationship between the developing country-based exporter and the developed country-based importer was governed by relatively low degrees of conflict. The only conflict identified was found to "have its roots in the existence of some transportation problems and difficulties involved in payment methods as well as in differences in goals, ethos, interests, perceptions and especially, roles between the Greek exporter and the British importer."¹⁷² Katsikeas and Piercy's study showed that in number of cases the Greek manufacturers had established trading relationships with Greek nationality importers in the U.K.. The authors suggested this could be seen as the exporters way of overcoming "psychic distance" in their export activity to the U.K.. Indications of similar trading relationship between exporter and importer of the same nationality were given by Jackson¹⁷³ who investigated the relationship between exporters from Israel and importers in the UK. Koh,¹⁷⁴ argued that exporters who perceive their product to be more unique and adopt own brand name labelling usually leads to the overseas distributor/dealer being more dependent on the exporter and therefore reduces the likelihood of supplier-switching. Koh also revealed that exporters who have formal educational background in exporting or international business, who are committed to sustained and long-term exporting, and who undertake frequent and extensive international marketing research, are more likely to meet more frequently with their overseas dealers, provide greater dealer support, and to be more aware of the competitive conditions abroad.

4.5. Export Performance

4.5.1. Criteria for Export Performance

Export performance of firms is inevitably one of the most important topics within the export literature. A number of studies have been undertaken to evaluate export performance of companies and industries in a number of countries. The most important question associated with export performance is what criteria should be used to evaluate export performance? One of the first studies to tackle this problem of export performance of firms was carried out by Hirsch.¹⁷⁵ He argued that before defining the meaning of export performance one needed to set out for whom this criteria of export performance was supposed to be useful. He claimed that for the individual businessman, profitability was the obvious measure to use, but for the economic planner, whose objective " is to find the mix of policies which will yield the highest returns in terms of export volume, given the political and economic constraints within which he operates,"¹⁷⁶ it was impossible to use profitability as a criterion of export performance. Hirsch therefore, made two main definitions of export performance, which he claimed took into account the objectives of the economic planner. The first criteria he defined as company's actual export value as a proportion of its total sale. The second criteria measures export performance in terms of growth in export value. A number of studies have used either or both of these two measures of export performance defined by Hirsch.^{177 178 179 180 181 182 183 184 185} Other criterion which have been used to measure export performance are manager's evaluation of firms average export growth rate relative to its average domestic growth rate,¹⁸⁶ actual difference between the average export sales growth rate and the average domestic sales growth rate,¹⁸⁷ manager's evaluation of the average export growth relative to the average of firms in the same industry,¹⁸⁸ the actual rate difference between the average export profitability ratio and the average domestic profitability ratio,^{189 190} manager's evaluation of the firm's average export profitability relative to its average domestic profitability,^{191 192 193 194} managers evaluation of the average

export profitability relative to the average of firms in the same industry,¹⁹⁵ ratio of export sales to total sales, relative to the average among its domestic competitors,¹⁹⁶ management perception of relative success in exporting,¹⁹⁷ ¹⁹⁸ the extent to which the initial strategic goals of management are achieved,¹⁹⁹ relative rate of export growth i.e. export growth divided by total sales growth²⁰⁰ market share of a company in its export segments across countries,²⁰¹ profitability measured as a return on investment²⁰² and the degree of export profitability *per se*²⁰³ ²⁰⁴ Finally, there are studies which ascribe exporting *per se* as sufficient criteria for success in export and categorise firms into exporters and non-exporters.²⁰⁵ ²⁰⁶ ²⁰⁷

4.5.2. Management Characteristics and Export Performance

A review of the empirical literature on management influence on export performance is given by Aaby and Slater.²⁰⁸ There they list fifty-five previous studies which relate export performance to management- characteristics and influences. Hirsch,²⁰⁹ found from his study of firms in Denmark, Holland and Israel that personal relations was attributed as one of the main factors for success in exporting. Other studies have also shown similar findings i.e. the importance of personal contacts and personal relationship.²¹⁰ ²¹¹ ²¹² ²¹³ Most research has shown that a positive attitude of company's management towards exporting is positively correlated with export success.²¹⁴ ²¹⁵ ²¹⁶ ²¹⁷ Czinkota and Johnston revealed that "willingness to endure some set-backs - being prepared for a sometimes longer wait for success in exporting than in domestic business - also seemed to be one of the main traits of successful exporters. Conversely, less successful firms seemed to be marked by a short-term orientation."²¹⁸ Jackson²¹⁹ also emphasised the importance of managements attitude towards exporting, portraying companies that fail in exporting as those which are often run by an owner-manager whose characteristic attitude is one of short-term opportunism - "making a deal." Management expectations of profits have been shown to be positively correlated with successful exporting²²⁰ ²²¹ ²²² and exporters who possess a

higher level of education and have more export experience have also shown to be associated with export success.^{223 224 225 226} In a study by ITI Research it was found that one of the most important factors in explaining different success in the export operations of firms in Britain, France and Germany was the all-important role played by middle management in the latter countries. This was stated in the report: "it was the scope and encouragement given to middle management 'in these countries' that translated concepts and possibilities into achievement."²²⁷ Madsen, revealed in his study (although not statistically significant) of Danish manufacturing firms that when companies were "exporting to a very close country (Scandinavian countries in this case) or to a very distant country (in this case countries outside Europe), top management support showed a positive impact on export performance, whereas decentralisation of responsibility tended to be negatively associated with performance."²²⁸ On the other hand, he also revealed (not statistically significant) that "when exporting to other countries (in this case other countries in Europe) decentralisation showed a fairly strong positive impact on performance, whereas top management support tended to be negatively associated with performance. Kirpalani and Macintosh,²²⁹ indicated in their research that commitment and effort by top management was a crucial factor for success in exporting.

4.5.3. Company Characteristics and Export Performance

Various company characteristics have been shown to be related to export performance even though, there have been divergent findings on their effects on companies export performance.

4.5.3.1. Firm's Size

In the export literature the two most commonly used measures of firm's size are the number of employees and company's turnover. Empirical findings on firm size and its

correlation with export performance have been very mixed.²³⁰ Hirsch,²³¹ found that a positive correlation existed between firm's size and export performance, up to a point.²³² Reid,²³³ found in his study that firm size "predominantly affects the export entry into new markets." Ghauri,²³⁴ investigated the export behaviour of Norwegian firms, employing between 1-500 employees. He found that there was a strong correlation between firm size and organisation of export activities. Exporting through an agent was particularly significant for firms with 20-99 employees, and export through a subsidiary was also significantly correlated with the size of the firm. Exporting through a subsidiary was mostly used by firms with 200-499 employees. Ghauri revealed in his study that there were significant differences between firm's size (number of employees) and export performance (per cent of total revenue received from export). He found that firms with less than 200 employees derived about 10 per cent of their turnover from exports while firms with 200-499 employees received about 75 per cent. Cooper and Kleinschmidt,²³⁵ on the other hand, did not find firm's size (sales and number of employees) relate to export performance and neither did Kirpalani and Macintosh,²³⁶ McGuinness and Little,²³⁷ Cavusgil,²³⁸ Axinn,²³⁹ and Louter et al.²⁴⁰ even though, they found that medium-sized exporters approached exporting with a more systematic approach and segmented their markets more often than smaller firms. Czinkota and Johnston,²⁴¹ found from their study of small and medium sized U.S. firms that there existed no statistically significant differences in exporting practices between these firms in terms of size. Walters,²⁴² attempted in his study to differentiate between export planners and non-planners using corporate size and the relative importance of export sales as discriminating variables. His findings indicated that the planners were much larger than the non-planners and also that the propensity to plan and manage export operations in a more dynamic fashion was found to increase with the relative significance of exporting. However, he found that these factors were not sufficient conditions for export planning.

4.5.3.2. Firm's Age and Export Experience

Kirpalani and Machintosh,²⁴³ found by interviewing 34 senior executives in U.S. and Canadian firms, mainly in the electronics, machinery and autoparts industry sectors, that a firm's age was significantly associated with success, but the association was negative. This they interpreted such that older firms might be less successful in international marketing, but also that newer firms might be more anxious to expand and to seek growth through international markets. Cooper and Kleinschmidt,²⁴⁴ using personal interviews when investigating export performance of Canadian electronics firms, found that the best performers were firms which they identified as "world marketers." These firms were unique in that they were the youngest firms and had the least years of export experience. They defined "world marketers" as firms which adapt products and segment markets (marketing concept), and markets to the world but not only to nearest neighbours. Louter et al.²⁴⁵ found from their study of exporters of consumer and industrial products in Holland that the number of years the firms had been exporting had very little influence on export performance. These are similar findings to Bilkey's²⁴⁶ who found "that the firms' perceived average profitabilities of exporting tended to vary inversely with the length of their export experience" but contrary to findings by Madsen, who claimed that the most important characteristics explaining export performance was the firm's export experience. He found that "successful export marketing management is facilitated by export experience in general and to an even larger extent by export experience relating to the buyer country."²⁴⁷ Jackson,²⁴⁸ argued that one of the main reasons that exporters from Israel, who he defined as "would-be exporter", fail in their export activity was a lack of experience in international marketing. Cavusgil,²⁴⁹ found export experience not to be a strong predictor of internationalisation.

4.5.3.3. Export Planning

"With international marketing planning, the purpose, form and methodology employed differs according to company size, organisation structure, length of involvement in international business activities, etc."²⁵⁰ This is in line with finding by Cooper and Kleinschmidt,²⁵¹ whose "world marketers" undertook the most extensive export marketing planning activities. In this respect they differed from all the other groups they defined, except those they defined as "world quasi marketers". Jackson, identified "successful exporters" as those who "were committed to building a long-term business relationship" in export markets and endeavour to sustain good communication. Walters²⁵² researched what differentiated export planners from non-export planners, using a sample of forest products exporters in the U.S. His findings indicated that exporting was generally an unplanned activity, and that the propensity to plan increases with firms size. Management commitment to exporting and some export structure, also showed to be important variables in accounting for planning activity. In a later study, Walters²⁵³ showed that as the relative importance of export sales in firms increases, so does the propensity to plan export operations. Madsen,²⁵⁴ revealed a significant positive relationship between export planning, control intensity and export performance. This is in line with previous findings by Kirpalani and Macintosh²⁵⁵ who found that "effective control system is a key factor for competing in international markets." In a later study, Beamish et al.²⁵⁶ showed that management attention to export planning and goal setting were important factors in achieving performance objectives in exporting.

4.5.3.4. Research & Development

There are a number of empirical research studies which have revealed that those countries and industries that spend a higher proportion of their sales on R&D (Research and Development) also tend to export a higher proportion of their

production volume.²⁵⁷ This seems to be particularly true for high-tech industries but for other industries and commodities exporters results are more mixed. Hirsch,²⁵⁸ investigated the relationship between R&D and export performance for a number of industries in Denmark, Holland and Israel. He found that in all the countries those industries which had the lowest expenditures on R&D in terms of sales or as a share of employees engaged in R&D, did have the lowest export performance. Also that those industries which had the highest R&D ratio in terms of sale were also "characterized by comparatively large number of firms which acquired production rights." McGuinness and Little,²⁵⁹ investigating 82 Canadian firms from different industries²⁶⁰ during the period from 1971-1976, found a strong positive relationship between export performance and the intensity of technological spending even though, they suggested that it might be more complex than generally assumed. These results coincide with findings by Cooper and Kleinschmidt,²⁶¹ who found that companies which showed the best export performance "were the heaviest spenders on R&D as a percentage of corporate sales."

4.5.4. Export Strategy

The relationship between export marketing strategy and export performance has been addressed in a number of studies on the export behaviour of firms, such as by Madsen,²⁶² Louter et.al.,²⁶³ Lee and Yang.²⁶⁴ In a recent study Cavusgil and Zou,²⁶⁵ argued that export marketing strategy, which included all aspects of the conventional marketing plan, i.e. product, distribution, pricing, and promotion, should be emphasised as a key determinant of export performance.

4.5.4.1. Product

"A product is anything that can be offered to a market for attention, acquisition, use or consumption; it includes physical objects, services, personalities, places,

organisations and ideas."²⁶⁶ McGuinness and Little,²⁶⁷ examined the export performance of new products and found the following product characteristics all had a significant impact on performance: relative improvement had a statistically significant positive influence on export performance; product tariff had negative influence on export performance; and, product age²⁶⁸ had some positive influence on export performance. The influence of product age contradicts to some extent to the findings of Hirsch²⁶⁹ who found, in all the three countries he investigated, that high export performance was strongly related to "age difference" between the product's introduction on the domestic and export markets. Madsen,²⁷⁰ found that the product itself was a very important factor for export success. He found that there was a strong association between "product strength and the firm's ability to find good agents/distributors on the export market." These two factors had then a positive impact on export performance. Like Madsen, Jackson²⁷¹ found that successful exporters from Israel to the U.K. market were those who produced to agreed quality standards and delivered according to agreed schedules. The importance of product adaptation or product modification have been shown to be related to successful export performance^{272 273 274 275} and the Barclays Bank Report²⁷⁶ emphasized that "product development should be linked to markets and patterns and trends prevalent in those markets." By the same way as product adaptation has shown to be an important factor for export success, product quality has been shown to be strongly related to export success,^{277 278} but some impacts of product uniqueness on export performance seems to be more vague.^{279 280} In a study of 91 Canadian exporters Beamish et al.²⁸¹ found that firm's export performance was related to superior product characteristics and that there was a positive relationship between a wide product line and success as measured by export sales.

4.5.4.2. Markets

A careful selection of markets and distribution channels are one of the most important things in international marketing and have shown to be strongly associated with export performance. Ayal and Zif²⁸² argued that a market concentration or a market diversification strategy depended on various situational factors facing a firm, such as the firm-specific, product-related and market-related factors. This was supported by Louter et al.²⁸³ who in their research of a sample of firms with less than 100 employees and which were all based in Holland showed that the number of countries which companies were exporting to differed with the type of industry²⁸⁴ and export performance was not bound to a certain type of market strategy but seemed to depend more on situational factors. In terms of segmentation they found that 72 per cent of the exporters segmented the foreign markets they entered. About 10 per cent used a focus strategy which in all cases was successful. In general their findings supported the notion that market segmentation contributed to export success. Hirsch,²⁸⁵ too, was unable to reveal any clear association between export performance and market strategy of the seven industries he investigated in Denmark, Holland and Israel. His research showed however, some clear differences between countries, with Denmark showing the lowest market concentration but also the highest export performance. The Barclays Bank Report²⁸⁶ showed that the more successful exporters in Germany, France and the U.K. were those firms which showed a marked degree of market concentration. According to the report, market concentration enabled these companies to acquire deeper knowledge about the important markets, more efficient administration of its marketing organization and improved service and management efficiency. Larger firms should "only under special circumstances choose to transfer the majority of marketing decision power to foreign agents/distributors." As "The choice of markets is undoubtedly dependent on many factors: size, distance, economic and political conditions governing foreign entry, currency regulations, levels and trends of demand, strength of competition and numerous other considerations affect the decisions of exporters about the markets they seek to enter and the relative distribution of their marketing efforts between different countries"²⁸⁷

Several studies, especially in the manufacturing and high-tech industries, such as by Lee and Yang,²⁸⁸ Denis and Depelteau²⁸⁹ have shown that firms conducting a diversification strategy show a better export performance (sales or export growth) than those using a concentration strategy. Olusoga²⁹⁰ investigated the effect of market concentration and market diversification strategies on the performance of 450 U.S. MNEs (Multi National Enterprises). His results supported the hypothesis that the profitability of MNEs using market diversification strategy was larger than that of MNEs using market concentration strategy. Cooper and Kleinschmidt,²⁹¹ found that export growth was much more strongly related to strategy than was export intensity. They also found that the export performance of the "world marketers" was also generally much better than of those marketing or selling to neighbour markets. Madsen's²⁹² study indicated that firms "that want to secure stable export activities with high performance should exploit their present export markets fully rather than attack new markets".²⁹³ His study also indicated that firms should choose close markets rather than distant exotic markets and choose markets with high growth and low local competition.²⁹⁴ Furthermore, he found that the optimal channel strategy for small firms (up to 50 employees) exporting to distant markets was the use of a foreign agent/distributor who is given power over most marketing decisions. For larger firms (more than 50 employees) exporting to very close markets, for example to the other Scandinavian countries he found the optimal channel strategy for the firm was to "internalise to the same extent as in the domestic market." For situations in between these above mentioned extremes, Madsen argued that the small firm should only under special circumstances choose to internalise to the same extent as on the domestic market" but larger firms should "only under special circumstances choose to transfer the majority of marketing decision power to foreign agents/distributors." As stated previously, Madsen's study also indicated that good personal contact and joint decision making with the channel members has positive effects on export

performance. Rosson and Ford's²⁹⁵ study, also previously stated, showed a positive relationship between export performance and low channel conflict. Koh,²⁹⁶ revealed in his study of firms in the U.S., exporting industrial products that the optimal channel strategy (most profitable) for industrial goods was exporting directly to final end-users. He also revealed that the sample firms perceived higher relative profitability when exporting through their own export department than through export agent. This is contradictory to Bilkey²⁹⁷ who found that for industrial products exported from the U.S. the most profitable use of export channel was to sell to a U.S. exporter who in turn exports the product. For intermediate products Bilkey found the most profitable use of export channel for firms was to export directly to foreign final buyers and for exporters of consumer products the use of a combination of two or more channels showed the best performance.

4.5.4.3. Price

"Price is the factor most frequently listed as a responsible for both success and failure in exporting."²⁹⁸ Several studies, such as by Kirpalani and Macintosh²⁹⁹ and Koh³⁰⁰ have found export pricing significantly associated with success in exporting. Yet other research ^{301 302 303} indicates a weak relationship between export prices and export performance. Hirsch found that in all the three countries he researched price was a important factor in export performance but differently though, between countries.³⁰⁴ The Barclays Bank Report³⁰⁵ stated that one of the things which often were expressed by exporters in Germany and France, but the report claimed these exporters to be more successful than the British exporters in general, was that price was important for simple products but less so the more one moves away from "simplicity". Among larger companies price was regarded much less decisive than in smaller firms especially in France and Germany, but in the U.K. where export performance was generally poorer than in Germany and France, price was regarded

similarly important among small and large companies. The report also indicated that in the U.K. more companies charged the same price in every market, than was the case in France and Germany. Koh found that "firms, which are consistent exporters, sell a unique product overseas, and undertake more frequent and extensive international marketing research, tend to use competitive pricing rather than relying on their domestic price list".³⁰⁶ He furthermore, found "that more complicated but customer oriented export price quotations are used by exporters who have had formal training in international business, consider exporting more important than the domestic business and undertake more frequent and extensive international marketing research."³⁰⁷ Bilkey³⁰⁸ found that firms that charge higher prices for exported products than for those at the home market tend to perceive relatively high profitability from exporting. This he found apply for consumer and intermediate products exported but for industrial products export prices remained the same as for domestic markets.³⁰⁹

4.5.4.4. Promotion

"Communications affect every aspect of the firm - its public image, its particular product or service, its employee morale, its shareholders' perception of corporate efficiency." Promotion includes the following factors: personal selling; exhibitions; public relations; sales promotion; and advertising.³¹⁰ As with other marketing variables there are vague results about the relationship between promotion and export performance. In a recent study Cavusgil and Zou found that "the degree of promotion adaption was strongly and positively related to product uniqueness, a firms experience with the product and export market competitiveness, but negatively to technology orientation of industry and to brand familiarity of export customers."³¹¹ Madsen,³¹² found that communication with market participants had positive relationship with export performance. Kirpalani and MacIntosh,³¹³ found that promotional efforts, as

distinct from advertising, showed a strong positive association with success in exporting (higher level of export sales). Karafakioglu,³¹⁴ found by researching export activities of Turkish manufacturers that firms which he identified as "heavy exporters" showed to be significantly more active in participating in trade fairs and exhibitions abroad than other exporters. This is in line with findings by Denis and Depelteau³¹⁵ who found that the greatest influence factor on the export expansion of 51 Canadian exporting firms which they investigated was attendance at fairs and missions. Personal selling and personal dimensions have shown to be related with successful export performance^{316 317 318} and Czinkota and Johnston³¹⁹ found that successful exporters are those who maintain continuous flow of communication.

Conclusions

In the first part of this chapter the two main streams of theories on firms internationalisation were examined. The first views internationalisation as an "adoption of innovation" process, in which the key variables are the activity of various "change agents", unsolicited orders, and several internal characteristics of the firms and persons involved. The second set of theories considers internationalisation of firms as an incremental development process, where exporting is an expansion of the firm's activity in the domestic markets.

As outlined in Chapter 3, the Icelandic fishing industry is distinctively characterised by the situation of "export or die" as only about 1 per cent of the total fish catch is consumed domestically. Sullivan and Bauerschmidt, faced with a situation of "export or die" among the firms they researched in the European forest industry, found little support for Johanson and Vahlne's thesis of firms' internationalisation process under such condition. The main shortcoming of Sullivan and Bauerschmidt's study however, is its failure to identify any factors which could be categorised as specific for the internationalisation process of firms which are faced with the situation of "export or

die". In view of the above findings, we can conclude that the step-wise models of internationalisation have little relevance in explaining the process of internationalisation of firms in the export sector of the Icelandic fishing industry. However, a number of initiating factors have been outlined in the literature of many which also are strongly associated with the "export entry models" of internationalisation. The main initiating factors identified are: the activity of various "change agents"; unsolicited export orders; saturated home markets; excess production capacity; profit increasing; sales increasing; diversification; competitive advantage; efficiency in transportation; and different government incentives. In the context of the Icelandic fishing industry the factors which are most likely to be of most relevance are: the activity of various "change agents"; unsolicited export orders; efficiency in transportation; enterprise; and, government policy. Conversely, some of the other motivating factors such as saturated home market, excess production capacity, and diversification, are not likely to be relevant factors in this study mainly because of the "export or die" characteristic of the Icelandic fishing industry.

The influence of government policy on firms export behaviour, has within the export literature mainly been focused on the impact of various government incentives to encourage exporting, exporters attitude towards the usefulness of various government programs, and the effects of state subsidies on firms export activity and performance. Generally, the results from these studies have been very mixed, and their outcome dependent on various external factors such as the type of firms, geographical location, and stage of development of the economies and industries concerned. However, there seems to be a need for more empirical studies on how the industries and firms' requirements for government services and programs differ according to their stages of development and internationalisation. Furthermore, there is a lack of studies, on the influence of government policy on the structure and behaviour of export industries and firms, and the implications of such policy on export and economic development,

especially in developing countries and those heavily dependent on exporting. Research in this field would not only serve the need for more efficient targeting of government programs to encourage exporting but, also provide valuable information on the implication of government policy on long-term export and economic growth and in creating export income stability.

The perceived barriers and problems in exporting usually appear to be associated with the firm's degree of internationalisation, personal characteristics of the exporters, and also factors such as the type of products exported and geographical location of the firms. A common characteristic of most of the studies on perceived barriers to exporting, is their use of quantitative information, collected by using survey questionnaires but, the use of qualitative information is rare. Subsequently, most of the factors listed as export obstacles in the literature are rather industry general, and few of the export studies have attempted to identify factors which could be categorised as industry or product specific. The most commonly perceived barriers in exporting or problems associated with exporting, in the export literature have been identified as: paperwork; building up of distribution network and selection of reliable distributors; import duties and other government barriers; communication; cultural and language barriers; the obtaining of funds to start exporting; financing export sales; collection of money from foreign markets; foreign currencies fluctuations; obtaining financial information; gathering market information; high production cost; high transportation cost; firm size; honouring letters of credit; understand foreign business practices; large domestic market; competition in foreign markets; and lack of people with knowledge in exporting. As relates to the Icelandic fishing industry, and in view of the information outlined in Chapter 2 and Chapter 3, the factors of: high transportation cost; high production cost; and, import duties in the foreign markets, are likely to be particularly relevant as barriers in the exporting of Icelandic marine products.

This chapter has shown that the characteristics of the export management (export decision maker) such as experience, education, age and command of foreign language, are critically important in influencing: initial involvement in exporting; use of informational sources in the export activity; attitudes towards exporting and export markets; and, attitudes towards factors such as risk, profit and cost associated with export activity. Despite, the importance of management characteristics within the behavioural relationship there exists between members of the export distribution system, Frazier and Kale proposed that differences in economic environment, the amount of natural resources, and supply and demand conditions in different world-wide markets, are decisive factors for the initiation of exporting and the relationship between exporters and foreign distributors. In the case of the Icelandic marine product exporters some of these theories are of particular interest, such as whether Iceland's possession of rich marine resources, does affect the exporters relationship with foreign buyers and distributors.

This review of the export literature has established that there is no clear formula for a export programme which guarantees successful export performance. It is also impossible to state how the various company, management and marketing variables influence export performance. A number of criterion have been used to measure export performance but, the two most commonly used are growth in export value and the company's actual export value as a proportion of its total sale. There are no clear signs about the effects of firm size on export performance although, there are some indications that larger firms and those which have a larger proportion of their total sales from exporting are more likely to plan their export activity than smaller firms who are less dependent upon exporting. The main elements of an export strategy: product; markets; price; and promotion have all shown to influence export performance of firms. Product adaption and product quality have shown to be strongly related to export success. However, theories differ as to whether

diversification or concentration strategies lead to better export performance. Also, it is likely that the most successful market strategy is dependent on various situational factors such as the type of firm, type of product and market situation.

Finally, one of the main conclusions from this study of the literature on export behaviour of firms, is the absence of any single or general models on firms export behaviour which can be directly applied in the Icelandic context. Many of the export behavioural studies are based on relatively small sample size and many of the empirical studies have shown statistically weak results. Export behaviour of firms seems to be dependent on various external and internal factors, such as type of industry, geographical location, and various characteristics of the firms and persons involved. It has been established in this review of the export literature that most of the studies on firms export behaviour have been focused on manufacturing industries in western industrialised countries, but relatively few studies have dealt with exporting firms in developing countries, and on those exporting primary commodities. Furthermore, that few of the firms or industries investigated in these studies have been faced with a situation of "export or die", i.e. where exporting is a prerequisite for survival of the respective industries and firms, due to small home markets.

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exporter to that country and adjusts exports optimally to changing exchange rates, tariffs, etc. Stage Six - management explores the feasibility of exporting to additional countries that, psychologically, are further away. In fact does the stages: four, five and six in Bilkey and Tesar model correspond to the three export stages in Cavusgil model

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In this article Frazier defined three processes of interorganizational exchange behavior in marketing channels: The initiation process focuses on why and how firms begin channel relationships with other business firms, the implementation process refers to how personnel of firms attempt to manage and co-ordinate ongoing channel relationships and the review process evaluates the rewards or losses achieved by each firm from the interfirm exchange relationship.

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P1: The importance of the initiation process to manufacturers, including finding the "right" channel partners, is lower in sellers markets than in buyers markets.

P2: The initiation process is of equal importance to distributors in sellers and buyers markets.

P3: Where sellers markets exist, the initiation process will be carried out in a relatively quick fashion by manufacturers and distributors alike with relatively little information collected and processed on potential exchange partners, compared to how this process will be carried out by manufacturers and distributors in buyers markets.

P4: Manufacturers in sellers markets will rely much more on personal criteria in selecting distributors than will manufacturers in buyers markets.

P5: Distributors in sellers markets will find a relatively large percentage of available manufacturers acceptable to them, compared to distributors in buyers markets.

P6: Power in distribution channel relationships in sellers markets will rest almost unilaterally in the hands of the manufacturer based mainly on the lack of alternatives to the distributor in contrast to channel relationships in buyers markets where levels of power are more balanced and lack of alternatives to distributors is not as dominant a factor.

P7: The level of manufacturers role performance is less important in sellers markets than in buyers markets and will contribute relatively little to its power over distributors.

P8: In the implementation process in sellers markets, the efficiency of the channel system is the channel objective of primary importance to manufacturers, while sales generation and efficiency are channel objectives of primary importance to manufacturers in buyers markets.

P9: Compared to its importance to manufacturers in buyers markets, the channel implementation process will be of relatively low importance to manufacturers in sellers markets.

P10: Channel co-operation will be of little benefit to manufacturers in sellers markets and, therefore, will exist at low levels relative to its levels in buyers markets.

P11: Compared to channels in buyers markets, interfirm communications and manufacturer influence attempts will be at low frequency levels in sellers markets.

P12: In comparison to manufacturers in buyers markets, manufacturers in sellers markets will make relatively frequent use of coercive influence strategies when they attempt to alter distributor decision making; this behaviour will be especially prevalent for the most powerful manufacturers in sellers markets.

P13: Goal incompatibility between manufacturers and distributors in sellers markets will be high in comparison to its level in buyers markets.

P14: Manifest conflicts will be kept to a minimum in sellers markets and will be lower in frequency than in buyers markets.

P15: The channel review process will be much less important to manufacturers and distributors in sellers markets than to manufacturers and distributors in buyers markets.

P16: Compared to buyers markets, attributions of responsibility for achieved financial results and thorough evaluations of channel partner performance will be made infrequently by manufacturers and distributors in sellers markets.

P17: Concerns about equity in channel relationships will surface infrequently in sellers markets compared to their frequency in buyers markets.

P18: Distribution channels in sellers markets will exhibit more stability in membership than channels in buyers markets.

156 Rosson, Philip J. Ford, David I. "Stake, Conflict, and Performance in Export Marketing Channels," Management International Review, Vol. 20 4 1980

157 As a measurement of stake level, Rosson and Ford used the proportion of sales going through an individual distributor. High proportion of the total sales through an individual distributor meant high stake in the corresponding channel. Because, Rosson and Ford found the relationship between stake level and the level of conflict relatively weak they suggested that other measures of stake might serve better in the corresponding research.

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III. Export Behaviour of Icelandic Marine Product Exporters

5. Current Structure of the Export Sector and Nature of the Firms Researched

Introduction

This chapter is based on information obtained through informal interviews with managers in 60 Icelandic firms exporting marine products (Section 1.2.). The chapter outlines the main types of firm included in this research and the current structure of the export sector. It examines firms' form of ownership, age and export experience and their regional distribution. The sixty firms included in this study are estimated to have handled around 92 per cent¹ of the total export value of marine products from Iceland in 1991. Thereof the Export Management Companies (EMCs) are estimated to handle around 85-90 per cent, and the Partially Integrated Exporters (PIE) around 10-15 per cent. The remainder of the total export was handled by firms not included in the study, firms which either would be defined as Other-Export Management Companies (Other EMCs) or Partially Integrated Exporters or individual vessel owners who land their fresh fish directly at the fresh-fish auction markets in; Hull, Grimsby or Bremerhaven.²

5.1. Profile of the Firms Researched

This section categorises the exporting firms included in this study on the basis of their principal activity. Two main types of firms are identified, namely; "export management companies" (EMCs) and "partially integrated exporters" (PIEs).

5.1.1. Export Management Companies (EMCs)

Czinkota and Ronkainen³ defined two types of EMCs, firstly, domestic firms which specialise in exporting and perform their services as agents and, secondly, domestic firms which specialise in exporting as distributors and operate internationally on their own account. The Icelandic definition of EMCs introduced here differs significantly

from these two defined forms. The Icelandic EMCs operate mainly as "commission firms" (umsýslufyrirtæki) where transactions and sales agreements (exports agreements) with foreign buyers are made in the name of the EMC but for the account of the processor. The processor however has title to the product until the sales agreement has been reached with the foreign buyer. If the product does not meet standards previously agreed between the EMC and the foreign buyer, the latter will make his complaints and seek some resolutions from the EMC who then has a recourse on the processor.⁴ In the case of the Icelandic EMCs all shipping documents such as bill of lading and invoices usually list the name of the EMC as a shipper or exporter, which seems to be paradoxical to the general understanding that the exports are on the account of the processor (producer) i.e. at his risk. However, there exists no direct law in Iceland governing "commission trading" (umsýsluviðskipti)⁵ even though it is generally acknowledged that the bulk of all exports of marine products from Iceland takes this form of trading.⁶ A calculated commission based on the value of the products exported is usually the main base of income for the EMCs. This commission is usually in the range of 2-4 per cent, although it differs between firms and product categories. Another common activity of most of the Icelandic EMCs is their role as importers and/or providers of various materials, necessary for the production and exportation of fish products such as packages.

5.1.1.1. The Principal EMCs

The three principal export organisations S.H. S.Í.F.⁷ and Í.S.⁸ together with Síldarútvegsnefnd could be defined as EMCs. In 1991 these four organisations shared about 58 per cent of the total exports of marine products from Iceland and the three major companies S.H., S.Í.F. and Í.S. are by far the biggest exporting firms in Iceland. Table 5.1 shows the absolute size of these firms in millions of Icelandic krónur (ISK)

in 1991 and their percentage share in the total exports value of marine products during that year.

Table 5.1.

The Size of the Principal EMCs

Name of firm	Exports in millions of ISK	% share of total exports of marine products	Total number of employees at 1991 ¹⁾
S.H.	18,100	24.1	85
S.Í.F.	12,600	16.8	45
Í.S.	12,100	16.1	60
Síldarútvegsnefnd	900	1.2	40

1) The number of staff in various subsidiaries are not included.

These firms are thought to be significantly different from most other EMCs in Iceland. All of the firms, with the exception of Síldarútvegsnefnd, are owned by their respective processors and have some central functions such as sales and export marketing organisations, in a network of independent fish processing firms. A common feature of these organisations is their 'product specialisation' and central role in advising and informing their members (the processing firms) on: product and quality standards, production planning, packaging standards, R&D services and in collecting and redistributing information to their members about export markets conditions and prospects. A managing director in one of the 'principal export organisations' described the role of his company such that:

" The company is first and foremost a collection-box of domestic and foreign markets information. When I say collection-box, it is obviously quite apparent that there is nothing which could be left there to remain, but rather the information must be on a continuous flow in and out of the box"

Another important characteristic feature of these EMCs is their relatively formal relationship with their members and producers. Prior to the reformation of S.Í.F. and Í.S. these two export organisations were very similar in their organisational structure to S.H. which has remained largely unchanged from its foundation.⁹ The firms operated relatively strict laws and resolutions,¹⁰ which included the retention of members or reservation funds and a voting power system which favoured, in some cases, smaller producers. Strict discipline exists within these organisations to prevent the members of these co-operative networks directing their exports through other channels of export. As stated in section 3.6.1. these organisations all operated as non-profit organisations and Í.S. and S.Í.F. have continued this policy despite their formation into shareholding companies. The calculated commission on products sold is primarily aimed at covering marketing and operational costs. After the reformation of S.Í.F. and Í.S. into shareholding companies they have continued to be, by majority shares owned by their previous members, but voting power is now based on each shareholder's share in the companies. The strict laws and resolutions have been abolished but formally documented agreements exist between the respective EMCs and the respective processors. The form of agreement between the processors and the exporting organisations can now be varied from long-term agreement, including the export of all relevant products for a unspecified length of time, to "one off" sales agreements, including only one exporting or selling organisation.

In addition to their primary role as EMCs these firms and various subsidiary companies serve their processors by importing various production supplies, such as packages, barrels, salt, etc.

5.1.1.2. Other EMCs

Most of these firms are relatively young and very small in size, when measured in terms of export value. They employ 5-6 persons on the average, typically including

the owner. In 1991 these companies accounted for around 22-24 per cent of the total export value of marine products in Iceland. The relationship these firms have with companies in other sectors of the fishing industry (harvesting and processing) are usually very informal i.e. not based on any documented agreements. Like the Principal EMCs, these companies often provide other services such as packaging materials etc for the firms in the processing industry. Other EMCs are usually very small, and the majority of firms have an export value of less than 800 million ISK. (Table 5.2.). The average number of employees in companies sized between 800-1200 millions is somewhat above the average for the group of Other EMCs. This is explained mainly by the fact that many of these firms are providing more extended services to companies in the processing and fisheries sectors such as supplying them with various services including packaging and fishing-gears. On average the Other EMCs received about 97 per cent of their operating income from the exporting of marine products. Only 9 of the Other EMCs had some production and financial links, usually through partial ownership, with firms in other sectors of the fishing industry.

Table 5.2.

The Size of the Other EMCs

Exports in millions of ISK	Number of firms	Average number of employees
0 - 200	6	2
200 - 400	8	4
400 - 800	6	5
800 - 1200	7	11
1200 - 1600	3	7

The Other EMCs, like the Principal EMCs seem to have widely adopted the strategy of 'product specialisation'. In 1991, 22 out of the 30 Other EMCs could be defined as 'specialised exporters'.¹¹ Three of these 22 firms specialised in the exporting of fresh fish on ice in containers, 2 firms were specialised exporters of fresh fish on ice by air,

13 firms specialised in the exports of frozen fish products, and 4 firms specialised in the exports of fish oil and fish meal. The average share of the related products in each firm's exports value was around 95 per cent (St.Dev. 8.9) during the respective year. Exports of the 8 Other EMCs defined as 'non-specialized exporters' was usually spread among 2-3 product groups.

5.1.2. Partially Integrated Exporters

The second main type of exporters defined in this study are companies which are partially backward integrated i.e. are actively involved in at least two of the three defined sectors of the fishing industry. This means that these companies are either in the business of primary or secondary processing and exporting, or are actively involved in all the three defined sectors. Hereafter, in this dissertation these types of exporting firms will be named; "Partially Integrated Exporters" or "PIE". Of the 60 exporting firms included in this study 26 of them are defined as "PIE". As these "Partially Integrated Exporters" are a very heterogeneous group of firms, they are in this study categorised into some five sub-groups. In 1991 PIE firms handled around 10-15 per cent of the direct exports of marine products from Iceland.

5.1.2.1. Partially Integrated Exporters - 1 (PIE-1)

The Partially Integrated Exporters-1 (PIE-1) are key members and principal owners of at least two of the Principal EMCs, (S.H., S.Í.F., Í.S., Sildarútvegsnefnd) and sell all their frozen and salted products through these companies. Most of these firms are product-diversified on-shore processing firms which are chiefly in the business of primary processing but in some secondary processing as well. In addition to their processing activity all these firms operate some big fleets of fishing vessels, which in all cases serve as the principal supplying units of raw materials for the processing plants. The secondary processing mainly includes the production of frozen groundfish

products in retail packages which are usually produced under the labels of foreign retail-chains and exported by the respective Principal EMCs. The direct exporting, handled by the PIE-1 firms, is mainly of whole fresh fish on ice. In those cases these firms are producers of fish meal and fish oil, the export of these products is sometimes handled by them as well.

In 1991 the turnover of PIE-1 companies ranged between 1200 - 2500 millions ISK. The number of employees ranged between 250 - 400 people, but the number of staff tends to fluctuate according to fishing seasons. The combined share of the 6 PIE-1 companies was in the fishing year 1992-1993 around 15 per cent of the total allowable catch in Icelandic waters (cod equivalent).¹² Around 75-80 per cent of the total production value of the PIE-1 companies was in 1991 exported by the Principal EMCs and around 20-25 per cent directly by the firms themselves, or through any of the Other EMCs.

5.1.2.2. Partially Integrated Exporters - 2 (PIE-2)

The second group of Partially Integrated Exporters are in this study named Partially Integrated Exporters - 2 (PIE-2). These firms are primarily in the business of harvesting but like the PIE-1 are in all cases exporting directly some parts of their products. The main products exported are either whole fresh fish on ice or products which are primary processed and frozen on-board the trawlers. In some cases these firms sell their fresh fish catch at the domestic auction markets as well. Firms which primary process and freeze their products on-board, either sell them directly to foreign buyers or they use the services of any of the Other EMCs or are selling via foreign agents. The exports of whole fresh fish on ice are usually handled abroad by special agency companies, which are located in the foreign ports and are in most cases either owned by people of Icelandic origin or are employing some Icelanders. The combined share of the 5 PIE-2 companies included in this study, was in the fishing

year 1992-1993 around 5.5 per cent of the total allowable catch in Icelandic waters (cod equivalent).¹³ Two of these firms are primary processing some large part of their catch on-board the fishing trawlers but the other three are mainly exporting their catch whole on ice. Turnover, of these companies ranged in 1991 between ISK 200 million to ISK 1,700 million and in terms of number of employees, their size ranged between 12 to 200 people.

5.1.2.3. Partially Integrated Exporters - 3 (PIE-3)

The third group of Partially Integrated Exporters is in this study named Partially Integrated Exporters - 3 (PIE-3). These firms are chiefly in the business of fish meal and fish oil production. Many of these companies are by majority shares owned by the PIE-1 firms or are closely linked to them. The supply of raw-material is primarily based on landings from independent vessels, but formal agreements between these firms (reduction factories) and the vessel companies are more an exception than a general rule. The following comments made by two respondents sum up the situation which exists at this market:

"We have bought much of our raw-material (capelin) from the same vessels but we have never made any formal agreements or documented contracts with them. Such agreements are totally meaningless and inadequate when you reach the point they should be honoured."

"In the capelin business the ruthlessness is total and you never experience anything like that. In the capelin business I don't want to have any formal agreements or contracts with the vessels and I think its best to be on this spot-market."

The nature of the fish-reduction industry in Iceland, which is primarily based on the harvesting of capelin and herring, means that there are usually some big seasonal fluctuations in the number of staff working in these firms. The dominating firm in this category is the only state owned firm included in this study; "Sildarverksmiðjur ríkisins", (S.R.) which produces about 1/3 of the total amount of fish-meal and fish-oil

which is produced in Iceland.¹⁴ Like most other firms in the fish-reduction industry the PIE-3 firms export the bulk of their production through the Other EMCs except in the case of S.R. which exports about 50 per cent of its bulk production directly. In 1991 around 0.3 per cent of the total exports value of marine products in Iceland was exported directly by these firms.¹⁵

5.1.2.4. Partially Integrated Exporters - 4 (PIE-4)

Partially Integrated Exporters - 4, (PIE-4) are defined as companies which are in the business of primary processing, mainly of groundfish species, and exporting directly to foreign markets. Supplying of raw-material for these firms is largely served from the fish auction markets but some direct buying from other primary processing firms or from fishing vessels, especially small vessels or boats, is also quite common. Compared to other firms in the processing sector, these firms tend to be relatively small and usually family owned. The principal owner is usually the managing director and responsible for the company's exporting activity. Seven firms of the 26 firms defined as PIE in this study are here defined as PIE-4. Average turnover of PIE-4 firms in 1991, was around ISK 200 millions. They employ on the average of 20 people. Four of the PIE-4 firms specialised in the processing and exporting of frozen marine products and three firms in processing and exporting of fresh fish, usually filleted and exported by air-cargo.

5.1.2.5. Partially Integrated Exporters - 5 (PIE-5)

The fifth type of PIE firms, defined as Partially Integrated Exporters - 5, (PIE-5) are companies which are only exporting their own products, produced within their own factories. The main features of these firms are; first, the majority of products are exported as fully processed, either under the firm's own label or under the labels of some foreign buyers. Second, unlike the other marine products exporters, the PIE-5

firms trade in the domestic market, which usually receives some substantial share of their total sales. The following comments sum up the importance of having a domestic market to the PIE-5 firms.

" It is the nature of any successful exporting company to have a strong home market and we feel it's crucial for a company like ours to have a strong home market to develop the consumer products which we aim to sell and export at some later stages in the future."

(World leading exporter of cod liver oil products)

" Even though we are exporting around 90 per cent of our production, we find it's important to have some home market for testing our products. "

(Exporter of canned products)

" First and foremost, you must have a home market of such size that it enables you to survive. The Icelandic market is my "test market" and I don't think I would have survived if I had solely aimed at the export markets."

(Small company and new in exporting)

Of the five PIE-5 firms included in this study, only the three biggest firms could be defined as what Cavusgil¹⁶ called "active exporters" but the two smallest firms could be defined as "experimental exporters" i.e. where exporting usually plays a minor role in these companies activity. The size distribution of these firms varies significantly, both in terms of sales value and in terms of number of employees, ranging from ISK 30 millions to ISK 900 millions and from 7 people to 100 people respectively. In addition to their exports of consumer packaged products, two of the biggest firms included in this category are active exporters of some primary processed products. Among the marine products exported by the PIE-5 are various canned marine products, fresh and frozen fish terrines, cod liver oil and cod liver oil capsules.

5.1.3. Product Categorisation of Exporting Firms

One of the main features, characterising the export sector is its fragmentation by product categories. Table 5.3. sub-categorises the three main types of exporting firms by the products they are exporting i.e. fresh, frozen, salted, dried, meal & oil, canned and other products. The category "Other" includes various products which are exported in retail and consumer packaging (except canned products), such as frozen groundfish products, and cod liver oil for human consumption. To avoid some double counting of firms in this analysis, the categorisation of firms in Table 5.3. is based on their direct exporting of marine products. This means that firms which we have defined as PIE-1 firms are categorised on the grounds of their direct exports of marine products but not on the basis of their production.

Table 5.3.

Categorisation of the firms by their types and products exported

(Based on each firms direct exporting at 1991)

Product \ Type of firms	Principal EMCs	Other EMCs	Partially Integrated Exporters	Total number
Fresh on ice	2	16	15	33
Frozen	2	21	7	30
Salted	4	6	2	12
Dried	2	6	1	9
Meal & Oil	1	6	5	12
Canned	1	4	3	8
Other	3	1	3	7

A detailed analysis of the data collected in this study showed that in a majority of cases, the firms which are specialising in the exporting of either fresh or frozen marine products, tend also to be actively involved in the exporting of the other. Of the 33 firms identified as exporters of fresh fish on ice, it was found that in 23 firms this export was of some importance. By importance we mean that the export accounted

for 10 per cent or more in the total export value of the respective companies. The export of frozen and salted marine products, as previously stated, is still dominated by the Principal EMCs. In 1991, the two companies S.H. and Í.S. accounted for around 70 per cent of the total exports of frozen marine products and the export of salted products is largely controlled by S.Í.F. and Sildarútvegsnefnd. The main salted products, exported by the Other EMCs and the PIE firms, have been salted lump-fish roe and salted cod-roe and increasingly various salted groundfish products. The exports of dried fish products remains mainly in the hands of Export Management Companies. None of the 8 EMCs identified as exporters of dried products, would fall within our definition as 'specialised exporters' of these products. The export of fish meal and fish oil, is however, characterised by the relatively large share, retained by the Other EMCs. Four of the six Other EMCs exporting fish meal and fish oil are specialised in the export of these products and for the two remaining the export of these products is an important part in their total exports. The export of canned products, which during the 1970s and 1980s was dominated by only one company, S.L., is now mainly in the hands of a number of small exporting firms, such as the Other EMCs or the production companies themselves (PIE-5). None of the EMCs and only one of the PIE firms, fall within our definition of 'specialised exporters' of canned products. In three of the Other EMCs and in one of the PIE firms, the exports of canned products are a very important part of their total exports value, usually in the range of 30-50 per cent. The exports of "other" which includes various products exported in retail packaging or ready meal products is primarily dominated by the Principal EMCs and some small PIE firms.

5.1.4. Form of Ownership

All the Principal EMCs used to be operated on some kind of co-operatives basis. Síldarútvegsnefnd was founded on the basis of special laws, and is operated as a private foundation but not as a state company. Two of the Principal EMCs S.Í.F. and Í.S., have been turned into shareholding companies, but are still relatively closed for investors outside their processor's base. Most of the Other EMCs are organised as shareholding companies, but none of these firms is open for outside investors and most of them operate as private companies, usually with the principal owner as the head of operation. Similarly, most of the PIE companies, except the PIE-1 companies, are organised as shareholding companies but as in the case of the Other EMCs their ownership is on a rather restricted basis. The only publicly listed shareholding companies in the Icelandic fishing industry are found among PIE-1 companies. Of the 6 firms we have defined as PIE-1, 3 firms have their shares traded on the market and are open for public ownership. At the time this research was conducted, only one company, S.R., remained in State ownership. By laws enacted in 1993 the company was transformed into a shareholding company but for the time the majority of shares are owned by the State.¹⁷

5.1.5. Firms' Age and Export Experience

The absolute importance of exporting, for practical survival in the Icelandic fishing industry, means usually for most Icelandic marine product exporters, that there exists no time lapse between the time the marine product exporting companies are established and to them become actively involved in exporting. The only significant difference between companies' average age and the average numbers of years they have been involved in direct exporting could be found among the PIE companies, mainly the PIE-5 companies. This could be explained mainly by the type of products these firms are exporting and importance of the domestic market for these firms. The

oldest firms in the export sector remain the Principal EMCs, as they were purposely established as special exporting firms during the 1930s and 1940s. Even though, Í.S., was formally established as a shareholding company in 1991 it is based on the foundations of S.Í.S., which became actively involved in exporting of marine products at a similar time as S.H., S.Í.F., and Sildarútvegsnefnd. Some of the oldest firms included in this study are the PIE-1 companies, which many were founded in the early years of this century, primarily as harvesting and processing firms but have, as previously stated, over the years become increasingly active in direct exporting. As shown in Table 5.4. the Other EMCs are on the average, the youngest exporting firms in the sector but, during the 1980s the number of these firms showed some phase of growth. Information collected in this study shows that 21 firms of the 30 Other EMCs were established during the period from 1981 to 1991.

Table 5.4.

**Age and Export Experience
of Icelandic Marine Product Exporters
(1992 as a reference year.)**

	Average age in years	Average direct export experience in years
Principal EMCs	55.7	52.3
Other EMCs	9.7	9.2
PIE	27.3	20.0

5.1.6. Regional Distribution of the Exporting Firms

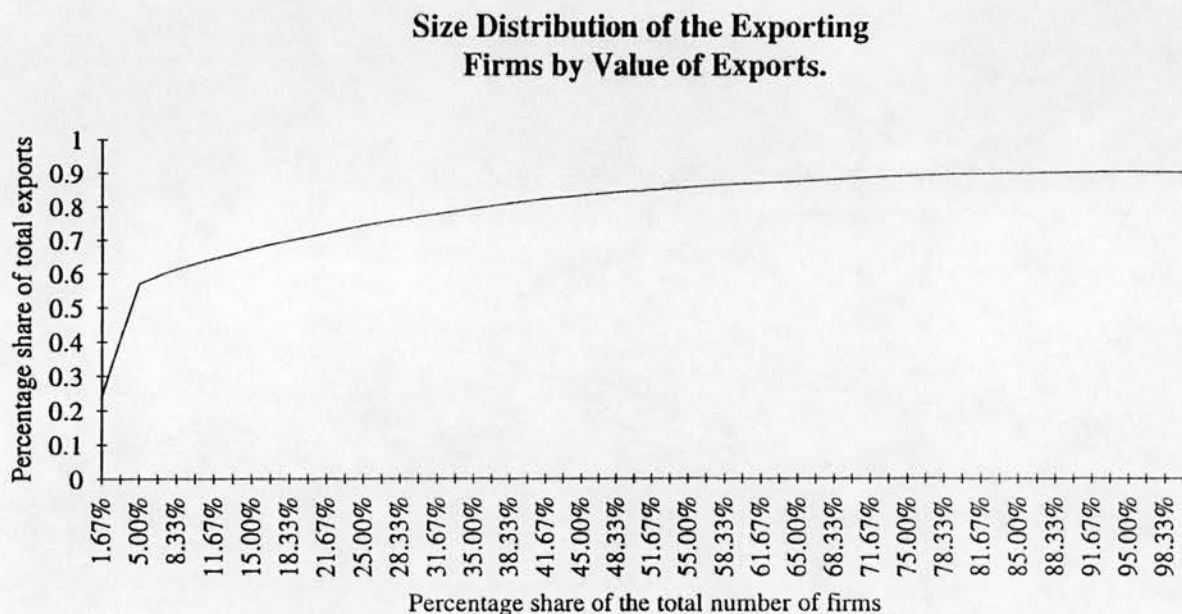
The increase in the number of exporting firms in the 1980s brought about a corresponding increase in number of firms which were based outside Reykjavík and the surrounding region. Previously nearly all of the exporting firms were located in

Reykjavík, even though, most of the harvesting and fish processing took place in other regions of the country. This could most likely be explained by the fact that few places outside Reykjavík offered the necessary infrastructural facilities to handle exports and foreign business transactions such as international communication systems (telex) and banking facilities.¹⁸ The two factors which seemed to have contributed most significantly to this increase in number of exporting firms, located outside Reykjavík were the emergence of new communication technology (the telefax), and in the case of fresh fish exports, new transportation technology (containers). Of the 60 firms included in this study, only 15 firms are domiciled outside Reykjavík and its surrounding regions. The majority of all firms exporting fresh fish on ice by containers are located in towns outside Reykjavík, but all the firms which are exporting fresh fish by air-cargo (usually fresh fillets) are located in Reykjavík and surrounding region.

5.1.7. Size Distribution of the Exporting Firms

By calculating the stated value of direct exporting in each firm in 1991 as a ratio of the total value of marine products export at that year, the Lorenz Curve¹⁹ plotted in Figure 5.1. indicates clearly the significant concentration which exists in the exporting of marine products from Iceland and the considerable differences which remained between the Principal EMCs and other firms included in this study.

Figure 5.1.

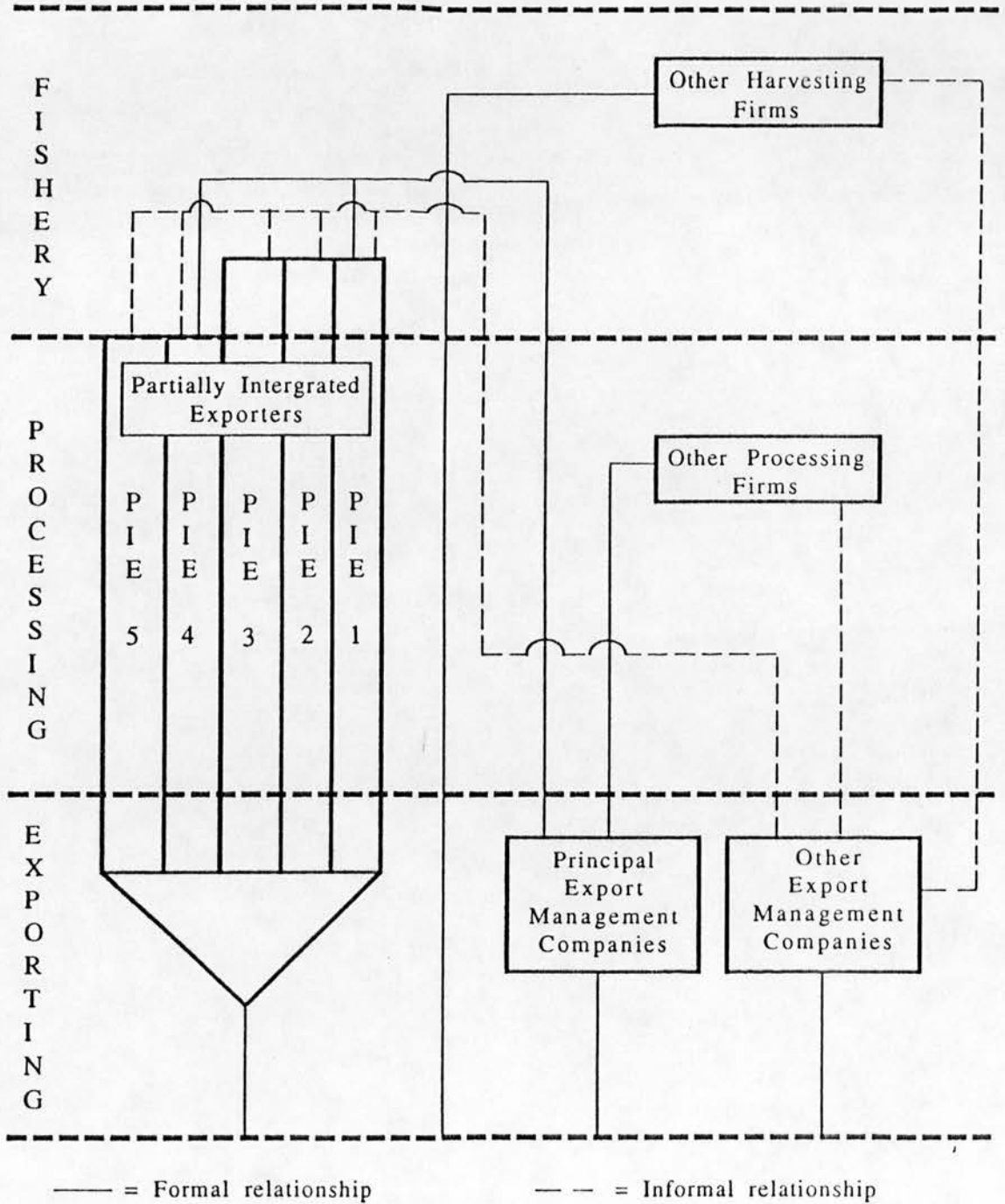


5.1.8. Structure of the Export Sector - An Overview

The structure of the export sector as outlined in this study and the form of relationship that exists between firms within the sector and with firms in the other sectors of the fishing industry is indicated in Figure 5.2.. As previously stated and as shown in Figure 5.2. the relationship between the Principal EMCs and other firms in the harvesting and processing sectors, is generally, rather formal i.e. based on written contracts or agreements. This is indicated by the whole-line which is drawn between the Principal EMCs and other firms in the industry but, the dotted-line indicates the form of relatively informal links there usually exist between firms in the harvesting and processing sectors and the Other EMCs and which is usually, based on personal contacts, or "gentlemen's agreement".

Figure 5.2.

Structure of the Export Sector.



Conclusions

This chapter has outlined the main categories of exporting firm included in this study. It's estimated that around 92 per cent of the total exports of marine products from Iceland in 1991 was accounted for by these firms. Categorisation of firms was made, firstly, on the basis of their principal activity and, secondly, where the above categorisation was considered insufficient for some distinct analysis, categorisation was made on the grounds of the main products exported by firms. Two main categories of exporting firms were identified on the grounds of firms' principal activity, namely 'export management companies' (EMCs) which we further sub-categorised into Principal EMCs and Other EMCs, and 'partially integrated exporters' (PIEs) which we sub-grouped into five types of firm, ranging from PIE-1 to PIE-5. Categorisation of firms on the basis of their main products exported was into fresh, frozen, salted, dried, meal and oil, canned and other. It appeared in this research that the majority of firms included could be defined as 'product specialised' in their exporting which means that at least 70 per cent of their total export derived from the exporting of one of the above listed product categories. Apart from some of the Principal EMCs, ownership of the firms remains mainly in the form of shareholding companies although many of the Other EMCs and PIE firms are literally operated on a family basis. Only a few firms remain open for outside investors i.e. their shares are traded on the stock market. The distinctive nature of the Icelandic fishing industry as being entirely dependent upon exporting, generally means that there exists no significant time lapse between firms start of exporting and their year of establishment. The Principal EMCs and some of the PIE-1 firms remain the oldest firms in the sector, but in the early 1980s, there was a wave of new firms, especially, Other EMCs which entered the sector and started exporting. This chapter concludes that there are four factors which are mainly characteristic for the current structure of the export sector and the firms involved.

First, the export sector is still largely dominated by relatively few firms despite important changes in its structure in recent years, and the apparently increasing number of small firms starting exporting and more active involvement in exporting of firms in other sectors of the fishing industry.

Second, despite substantial reduction in the share of the Principal EMCs in the total export of marine products in the late 1980s, the largest share of the marine products export still remains in the hands of 'export management companies,' i.e. Principal EMCs and Other EMCs.

Third, like the Principal EMCs most of the younger and smaller firms in the export sector are significantly product specialised in their exporting activity.

Fourth, there are important differences between the Principal EMCs and the Other EMCs in the form of links they have with firms in the two other sectors of the fishing industry (fisheries and processing) with the Principal EMCs keeping much stronger and more formal links with firms in these sectors.

References Cited

- ¹ Statistical estimates based on information collected in this study. As stated in the introduction chapter many of the smaller firms admitted some inaccuracy in their figures of the total export value of marine products. Due to sharp reduction in the capelin catch in 1991, and the fact that the export of fish meal and fish oil is largely exported by Other EMCs and PIE-3 firms, it could be argued that in a normal harvesting year for capelin, the export of fish meal and fish oil could be around 5 per cent more on average than it was in 1991 as a percentage of total export value of marine products. Consequently, the firms included in this study could in a normal harvesting year of capelin, have accounted for around 97 per cent of the total export value of marine products from Iceland.
- ² This group of firms was not included specifically in this study although some of the PIE firm obviously applied this form of exporting. Based on the type of products these firms are exporting the export behaviour of these firms or individuals is likely to be similar to those other firms which are exporting fresh fish to foreign auction markets.
- ³ Czinkota, Michael R. , Ronkainen, Ilkka A. International Marketing, Second edition. The Dryden Press International Edition., 1991.
- ⁴ Sigurðsson, Páll. Samningaréttur. Yfirlit ummeginreglur íslensks samningaréttar. Bókaútgáfa Orators, Reykjavík 1987. page 210
- ⁵ Ibid, page 343
- ⁶ Ibid, page 208
- ⁷ S.Í.F was reformed into a shareholding company in 1993
- ⁸ Samband íslenskra Samvinnufélaga , S.Í.S. (Federation of Icelandic Co-operatives) was established in 1902. In 1969 , S.Í.S. was divided into six operational departments. One of these departments; Sjóvarafurðadeild (The Marine Products Department) was formed around the exporting of fish. It was jointly established and owned by S.Í.S. and the freezing plants which prior to its establishment sold their products via S.Í.S.. Sjóvarafurðadeild S.Í.S. was organised on similar principles as S.H. and S.Í.F, i.e. it retained members fund and had its revenue from a commission received on all sold marine products. From here on we will use the name of the reformed company: Íslenskar Sjóvarafurðir Ltd. abbreviated Í.S.
- ⁹ Pálsson, Friðrik. Interview: 15.06.1992
- ¹⁰ These laws and resolutions were slightly different between the three export organisations, and usually stipulated things such as: 1) Mutual duty of product- delivery and sale, i.e. the members were obliged to sell all their frozen products through the export organisations and in return the export organisations promised to export and sell all their frozen fish production. 2) The organisations all retained either members' funds or reserves fund. The members funds were built up by reserving and retaining a proportional amount of each individual member's export value each year which was labeled to him. If any member wanted to withdraw from the organisations they received only their share of the members fund. In the case of S.Í.F, which only retained a reserves fund which was not individually labelled the withdrawing members only received their share of the fund five years after they withdrew their membership. There are many who have rightly argued that members withdrawing from these organisations left without receiving their share of various hidden assets in these organisations because their share of the value of these organisations was only based on the book value of their share but not the real value, which in all cases could be argued was substantially higher than the book value. This is because of things such as the value of these companies sales and marketing systems abroad is not entered into their accounts and neither is the real value of their foreign subsidiaries.

The voting power system was similar in the case of S.H. and Sjárvarfurdadeild SÍS. In these firms part of the voting power was allocated according to each member's share of the members fund, part of it according to the previous years export and part based on equal voting power i.e. one member one vote. In the case of S.Í.F the voting power was according to previous year exports.

¹¹ The criteria used in this study for categorizing firms as "product specialised" exporters is if any type of product i.e. fresh (iccd), frozen, salted, oil & meal, dried or canned accounts for more than 70 per cent of the firms total exports value. Categorising firms according to their degree of specialisation requires some care as some of the firms classified as specialised exporters, might in fact be very non-specialised and vis-a-versa. An example of this is a company which specialises in the production and exporting of fish roes, where about half of the production is exported frozen and the other half salted. This company which is strategically a very specialised company both in production and exporting would, according to the previously used definition, be recorded as a non-specialised exporter. By the same token a company which exports more than 70 per cent of its products in a frozen form and therefore, would be defined as specialised exporter could in fact be "non-specialised" if exporting heterogeneous products, ranging from fish which is exported whole-frozen to foreign markets, where it's primary processed, to various fish products which are exported exported frozen in retail packaging, after having been both primary- and secondary processed in Iceland.

¹² Information received from Kristján Skarphéðinsson, Chief Economist, The Icelandic Ministry of Fisheries. 25.03.1993.

¹³ Information received from Kristján Skarphéðinsson, Chief Economist, The Icelandic Ministry of Fisheries. 25.03.1993.

¹⁴ Magnússon, Jón Reynir. Interview 14.05.1992.

¹⁵ The catch of capelin was exceptionally small in 1991 compared to a normal year. In a normal year the exports of fish meal and fish oil from Iceland, are around 8-12 per cent of the total exports value of marine products. Therefore, in a normal year the direct exports by the PIE-3 firms could be around 1.5-2.5 per cent of total exports of marine products.

¹⁶ Cavusgil, Tammer S. "Differences Among Exporting Firms Based on their Degree of Internationalisation." *Journal of Business Research*, 12 (1984) pp 195-208.

¹⁷ At the 7th of July 1993 Síldarverksmiðjur ríkisins were formally turned into a shareholding company: S.R. Meal. In the end of October 1993 all the shares were still owned by the State.

¹⁸ This opinion was expressed by many of my respondents whose firms are based outside Reykjavik.

¹⁹ A construct used in the calculation of measures of inequality. Using the value exports, the Lorenz Curve plots cumulative percentages of total exports value against cumulative percentages of number of firms included in this study.

6. Initiation of Exports and Problems Associated with Exporting

Introduction

In the previous chapter we outlined the main structural characteristics of the export sector and the firms included in this research. The main objective of this chapter is to explore some of the behavioural factors which characterise these firms in their exporting activity, such as the factors which initiated their initial involvement in exporting, the firms' process of internationalisation and factors identified as problems associated with exporting by managers in the exporting firms. This chapter, like Chapter 5, is based on informal interviews with 60 managers in firms exporting marine products from Iceland, (Section 1.2.).

The first section identifies the main internal and external factors which initiated or motivated the establishment of new exporting firms in the sector and encouraged more direct involvement of firms in other sectors of the industry into exporting. We examine what factors influenced their first export order and affected their initial selection of export markets. Furthermore, considerations are given to whether some of the identified factors could explain some of the structural changes which emerged in the export sector in recent years. Finally, we examine the different process of internationalisation by firms in the sector.

In the second section, we examine what factors are perceived by managers in the exporting firms as obstacles or problems associated with exporting of marine products from Iceland. Considerations are given to how factors such as natural fluctuations in the marine environment (industry-specific), geographic distance from export markets, small home market and small size of the Icelandic economy (country-specific), are affecting the export behaviour of different types of firms in the sector.

6.1. Initiation of Exports

In the following section we will examine the initiation of export, by the Principal EMCs, Other EMCs and the different types of PIE firms.

6.1.1. Initiation of Export by the Principal EMCs¹

It is generally acknowledge that the foundation of the three Principal EMCs (excluding Sildarútvegsnefnd) was initiated by individuals within the fishing industry, but external factors such as government policy in Iceland at the time of their foundations, largely encouraged their formation in the 1930s and 1940s. The main government incentive was undoubtedly the issuing of monopoly or duopoly licences to these firms, which granted them exclusivity in the exporting of certain types of marine products from Iceland to particular markets. The existence of Sildarútvegsnefnd, one of the Principal EMCs, is still based on law and its exports largely protected from domestic competition.

6.1.2. Initiation of Export by the Other EMCs

As government policy encouraged the foundation of the Principal EMCs, we can similarly argue, that by gradually abolishing these exclusive rights retained by the Principal EMCs, government policy strongly influenced some of the structural changes which have been taking place within the export sector and reflects in an increasing number of Other EMCs. It seems however, that there was a variety of other factors, both internal and external, which contributed more significantly to the formation of the Other EMCs during the 1980s and 1990s. The external factors appear to be: first, the encouragement and support which many founders of these companies got from domestic processors (processing firms), with whom they had made some contacts in their earlier jobs. In some cases the encouragement also came from previous foreign buyers. This relates to the fact that many of the managing

directors and principal owners in the Other EMCs, had usually gained their initial experience in exporting within other marine products exporting companies, often the Principal EMCs or the Other EMCs.

"One of the processors, who produced for the exporting company I worked for earlier, encouraged me to start on my own and he promised to support me by the supplying of products."

(Managing Director, in a small Other EMC)

"The main reason behind the establishment of this company, was that I was backed up and encouraged by some domestic producers and also foreign buyers to establish my own firm."

(Managing director, one of the biggest Other EMC)

Second, structural changes within other sectors of the fishing industry which opened up opportunities for many of the existing Other EMCs to expand their base of producers, but also initiated the establishment of new exporting firms. These structural changes were mainly the increasing number of freezing-trawlers, which normally process and freeze their catch onboard, and the increasing number of small landbased processing firms, which usually get the bulk of their raw material at the fresh fish auction markets in Iceland. (The first auction market was established in 1987).

"This company has been specialising in the exporting of sea-frozen products..... The advent of freezing trawlers into the fishing industry in the early 1980s opened up some opportunities for us, 'the small guys' especially as the 'big export organisations' didn't give these new 'processors' a proper service or show interest in what they were doing."

(Managing director, one of the biggest Other EMC)

Third, favourable market conditions during the late 1980s. This appeared *inter alia*, in a big demand for various marine products such as cod and haddock, especially in

the West-European market. Consequently, it remained relatively easier for new exporters to find foreign buyers than otherwise might have been the case. Evidently, many of the Other EMCs, which chiefly focused on the exporting of fresh fish on ice in containers emerged during the 1980s following an increasing demand for marine products at the principal fresh fish markets in the U.K. and in Germany. These firms were, typically, established by people who had some strong links within the harvesting sector (in many cases former fisher-men). The factors which most heavily contributed to the establishment of these firms (Other EMCs) however, or persuaded existing firms (mainly PIE-2) to start direct exporting were the large degree of encouragement these firms got from individual vessel owners in the towns where these firms are located and the two factors outlined in section 5.1.6. i.e. new transportation and communication technology.

" What initiated the establishment of this company in 1986 was that at the time of its foundation, there was only one big buyer of fish (PIE-1) in the town, which literally bought nearly all the fish which was landed and at prices which were officially fixed. This meant that at this time many of the individual vessel owners felt they were under the heel of this company (PIE-1). Emergence of this company was therefore, especially welcomed by these individual vessels owners who now got a new alternative for selling their catch."

(Manager Other EMC which specialises
in the exporting of fresh fish on ice in containers.)

Internal factors, which possibly contributed most significantly to the decision made by many of the managers in the Other EMCs to start exporting were: First, the experience which many of them had from living abroad and which complemented their generally good command of foreign languages. About 50 per cent of the managing directors in the Other EMCs had lived abroad for a longer period than one year and 43 per cent of them had obtained their university degree from foreign universities.

Second, the generally felt desire by many respondents in these firms to become their own masters and their expectations about making profit.

" This firm was initially established as an importing company, but in 1982 it started to export fresh fish on ice in containers. I don't know exactly, what led to this, but the owner of this company always looks for everything which possibly could make him some money."

(Managing director of one of the biggest Other EMC)

" When I had finished my study in 1984, I started to work as a marketing manager in a small company which was exporting fish and fish products. As exports were growing fast and going well, I felt my salary were constrained, so in 1986, I decided to establish my own exporting company."

(Managing director and principal owner
of a medium sized Other EMC)

" I established this company in the late 1980s and I can tell you very frankly that the main reason for its foundation was my expectation of making profit."

(Managing director and principal owner
of one of biggest Other EMC.)

6.1.3. Initiation of Export of the Partially Integrated Exporters

It's generally acknowledged, that many of the PIE firms have in recent years become more actively involved in the export side of the fishing industry. As in the case of the Other EMCs, managers' experience from living abroad and extensive travelling abroad are among factors identified in this study, which suggests generation of greater involvement of these firms into exporting. Exporting of whole fresh fish on ice by the PIE-1 companies, which in some cases is their only direct export, seems usually to be based on: first, the expected prices for whole fresh fish on ice at the main foreign auction markets, which frequently were stated could out-weight the calculated value-added received from primary processing the fish domestically; second, some of the

processing firms have used the fresh-fish markets abroad as alternative product markets, in order to smooth out some peaks in the amount of fish landed by their trawlers, which is in excess of the amount of fish which keeps utilisation of the processing plants at an acceptable level.² The following statements made by some of the managing directors of these firms, sums up their general reasonings for exporting whole fresh fish to the foreign auction markets rather than processing it in their processing plants.

"As we have a relatively big quota of redfish, which is very difficult and costly in primary processing so our exports of whole fresh fish on ice has been increasing"

"We are increasingly relying on independent vessels, which we have some formal agreements with, as the main sources of raw-material for our processing plants, as we have increasingly exported the fish caught by our own trawlers, whole on ice, especially the redfish"

" Our exports of whole fresh fish on ice in containers have been aimed at exporting only that amount of fish which is in excess of what guarantees an acceptable level of processing in our plants, which means some continuous work for our people in the plant."

Despite the above reasons for exporting of fresh fish on ice, the main factors stimulating increasing involvement of the PIE-1 firms in exporting and more active involvement in the Principal EMCs,³ appear to be an increasing export-marketing orientation and enthusiasm by the management of the PIE-1 firms and a failure by some of the Principal EMCs to respond to some of the previously outlined structural changes in the industry's environment.⁴ Even though managers in the PIE-1 firms generally felt that their membership in the Principal EMCs was a major strength for their companies, their attitude was that the formation of more direct links between the PIE-1 and the foreign buyers would be imperative in the future, particularly if the Principal EMCs were going to retain their shares in the total export of marine products from Iceland. The following notions, made by some of the managers in the

PIE-1 firms, outlines the increasing desire within these firms of more direct involvement in exporting.

"The new generation of people, which is gradually taking over the top-management positions in these firms (the PIE-1) are much more market conscious than the previous generation who expected to be fed on market information from the big sales organisations (Principal EMCs)."

(A 30 year old managing director of a big PIE-1 firm)

" There is a general desire within these bigger firms (PIE-1) to create some closer links between them and the respective foreign buyers. If the Principal EMCs don't respond positively to this desire, and also realize that we might have interests in other fish products than just the one which they are exporting, I think we might see some bigger share of the production of these companies exported by them directly."

(Managing director of a PIE-1 firm, who is in his thirties)

"The main drawback of the big export organisations (Principal EMC's) has been the tendency within them to block the flow of information between the export markets and the producers. I therefore, think we will see more direct links between the producers in Iceland and the respective foreign buyers."

(Managing director of a PIE-1 firm, who is in his forties)

"Our generation will never accept to be excluded from marketing. The people who are now in the management positions in these companies (PIE-1) will never relinquish their right to be involved in marketing. Marketing is just one part of the function of these companies."

(Managing director of a PIE-1 firm, who is in his forties)

The second factor which possibly explains a greater enthusiasm by some of the PIE firms in direct exporting, relates to the current product specialisation of the Principal EMCs. Managers in some of the the PIE-1 firms and also in other PIE firms, which had suspended their membership in the Principal EMCs and started direct exporting,

felt that in some cases these product specialisations were working against the interests of the member firms.

"I am of the opinion that the "sales organisations" (Principal EMCs) are too specialised and that this specialisation is often working against our interests as we are a company which can supply all kinds of marine products. I can give you an example. We are members of X and last year it happened that there was a big company in Denmark which wanted to visit us. They sent a telefax to X's sales office in Hamburg where they explained that they were about to go to Iceland and among many things which they intended to do there was to visit our company. This Danish company got a telefax back from X's sales office which stated: "we will not permit any visits to our plants except escorted by people from X". I can tell you that this really did upset us. This is what I mean when I say that the "sales organisations" are too specialised. In this case they didn't understand that we are a company which has interests in all kinds of marine products such as fresh, frozen, salted, dried, meal & oil, and so on, and that this particular company in Denmark was possibly interested in other things than frozen fish."

(Managing director of a big PIE-1 firm)

" We used to produce fresh fish fillets which were exported by Y to the U.S. market. When Y decided to stop exporting fresh fish, we decided to continue to supply this buyer in the U.S. by exporting directly. Then, when there became a pressure from this buyer that we supplied him directly with frozen fish fillets, we couldn't do it, because of our membership in Y. At that time we made the "big decision" to suspend our membership and leave Y."

(Managing director of a PIE firm which suspended its membership in one of the Principal EMCs)

A failure by the Principal EMCs to respond to certain structural changes within the fishing industry, and desires among their members to become more involved in exporting, was underpinned by views expressed by respondents in some of the firms, which previously were members of one or more of the Principal EMCs, but also by one of the managing directors in the Principal EMCs.

" When we initially started our business, i.e. to produce sea-frozen fish, we decided to use the services of the sales organisations (Principal EMCs). It was however, apparent, that people within these organisations had very little confidence in this idea of processing and freezing onboard, and they didn't show much interest in selling these products. What, however, was most decisive, was our desire to sell under our own label, but also that within these sales organisations, everybody is treated equally."

(Managing director of one of the biggest harvesting firms producing sea-frozen fillets)

" The main reason I decided to suspend our membership for the freezing trawler in X and rather export the products directly, was I found it extremely irritating, to have no guaranteed sales when the trawler came in to harbour for landings. Secondly, it up-set me tremendously, that Y couldn't quote us the actual export prices, but only their "list prices". That meant I had to make provisional pay settlements with the crew after each fishing trip. Consequently, if I had to pay back, because the "list prices" were higher than the actual export prices, it was sometimes extremely difficult to convince the fishermen about that."

(Managing director of a PIE-1 firm)

" I felt I was kept away from the market place. I was only producing for a freezing storage but not for a market. There was no incentive or encouragement."

(Managing director, PIE-4 firm which suspended membership in its Principal EMC)

" During the last 10 years or so, we have seen this awakening among the producers (processors) to start exporting directly. I suppose that we have failed to some extent, in getting them to understand that they are in fact exporting themselves by selling through us.

We admit that we failed to incorporate the freezing trawlers and I have to say, it was mainly because they were principally against marketing. They just wanted us to take all their produce, sell it at the highest possible prices each time and pay it outright."

(Managing director of a Principal EMC)

Different to most other firms in the sector, the most significant factors motivating managers of the PIE-5 firms to start exporting were their desire to increase sales and

to enlarge market sizes. These factors were also generally perceived by managers in these companies as the prerequisite for putting more financial resources into product development, but product development was generally recognised as the key for future survival of these firms.

6.1.4. Start of Exporting and Selection of First Export Markets

Overall it seems that the selection of the first export markets by the exporting firms, is decided significantly by the type of products they start to export. This relates to the fact that the export of different fish species and marine products, is in many cases restricted to a limited number of countries or areas, depending on consumers' tastes and preferences in these markets. An example of this is the export of salted groundfish and salted herring which (as indicated in Chapter 3) is only exported to a limited number of markets. The initial structure of the export sector and foundation of the Principal EMCs⁵ was a direct result of this product fragmentation in exports and export markets. In the cases of S.Í.F. and Sildarútvegsnefnd the initial markets were in the Mediterranean countries and in Northern Europe respectively, but the first exports of frozen fish products by S.H. and Í.S. were to the U.K. market. However, in their very early years of operation, these firms turned their main emphasis in export of frozen groundfish products to the U.S. market, where they both established subsidiary companies and subsequently invested in secondary processing plants. The main reason for this early emphasis by S.H. and Í.S. in exporting to the U.S. market, rather than to the European market, was based on "judgemental decision, by people in these companies, that the European market would not be a feasible market for frozen fish products, as Europe at the time, after the Second World War was both in physical and economic ruins."⁶ As in the case of the Principal EMCs, the exports of other firms in the export sector is still very 'product specialised'. Consequently, the type of

marine products exported by these firms significantly affects their selection of first export markets. Managers in the Other EMCs and the PIE firms claimed that their first export order and selection of first export markets was by no means the result of a thoroughly planned activity. Before beginning to export, these firms only collected a very limited amount of market information. In no instance was the first export order unsolicited, but was frequently the result of a vigorous search abroad for business contacts. Contacts made with foreign buyers in earlier jobs were also vital, and sometimes led to the first export order.

" My first exports were fresh haddock fillets, which I exported to Baltimore in the U.S.. The buyer was a company which I had found by searching the "yellow pages". I was lucky because I jumped on this totally blind."

(Managing director of a small Other EMC, which specialises in the exporting of fresh fillets to the U.S. market)

" Most of our exports, as well as most of the exports of marine products from Iceland is what could be called "bulk" sales. In our case, we did not collect much information about the export markets. The marketing methods could be described as very primitive or basic. You obviously try to collect information about the existing market prices, but there is no systematic collection of information. This fish business is as you probably know a relatively small world."

(Managing director of a medium sized Other EMC firm, which was established in 1983, and is mainly exporting frozen products.)

There were 2 factors, modestly stated by managers in the Other EMCs and the PIE firms, as being of some importance in creating their first export order and affecting their selection of first export markets. First, existing personal contacts abroad, often gained through experience of foreign living and second, the felt "relative closeness" of the North European markets, especially the U.K. market, compared to some other markets such as the U.S. market. "Relative closeness" related to factors such as culture, mentality, and general knowledge about business practices. The above notion

was also supported by the fact that in a majority of cases did managers of the Other EMCs claim, they started exporting to various markets in Europe rather than to more distant markets such as in America and Asia.

"My first exports were to Japan and I used some contacts which I had there. I was the first person, who sold sea-frozen Greenland-halibut to Japan, but there was no systematic collection of information on my behalf."

(Managing director, who studied in Japan and lived there for 5 years.)

" My first export was to France. I did have some contacts there, and I used them. This was literally a "one off" sale. The buyers were people which I am always in contact with even though I am not selling to them on a permanent basis."

(Managing director of a small Other EMC who studied in France and lived there for several years.)

" The mentality in Europe is totally different from what it is in the U.S.. In Europe there is a much stronger tradition for fish consumption and the ordinary consumer there knows for example that a natural fish fillet has bones just like chickens. In the U.S. things are different. That market has stronger processing requirements for the fish than the European market. The U.S. are, as you know, chock-full of lawyers and if somebody finds a bone in his mouth, it's a threat of some litigation hanging over you."

(Managing director of a small Other EMC)

" I find the U.K. market and the Danish market are much closer than the other markets I am exporting to. I am not sure whether it's because of these historical relationship between Iceland and these countries. I think it's more because we have similar mentality as people in these countries and that business is mainly based on personal contacts."

(Managing director of a medium sized Other EMC)

Even though it seems that most of the exporting firms could be defined as "aggressive"⁷ in the sense that they seem normally to be seeking their first export order, the receipt of inquiry from abroad sometimes leads to actual exports. The

arrival of "telex machines", one of the most used communication devices in the exporting firm, was generally viewed by interviewees, as having increased the flow of inquiries from foreign firms. The way in which these inquiries are dealt with tends, however, to differ among firms. Some managers endeavour to answer all incoming inquiries, but others claimed that most of the general inquiries coming in on the telex tended to be "junk mail" which usually meant that they restricted their response to firms with which they were familiar. Exporting firms which had implemented certain quality systems such as ISO 9000, had some systematic handling on all inquiries, in line with directed standards. Circumstances frequently encountered in the interviews, especially with managers in the Other EMCs and the PIE firms, was the relatively big number of these firms which had experience of being approached by Icelanders living abroad, even though it was stated to be less common than it was three to four years ago. These Icelanders, who usually state their interests in marketing Icelandic marine products in the countries where they are living, often assert to have foreign buyers and are offering their services as agents to the exporters. Generally, my respondent managers expressed, "bad experience" from these business relationships with Icelanders living abroad. "Bad experience" usually, related to the fact that many of them admitted having lost considerable amounts of money in this type of trading.

" It has happened to us that we have lost money, because we have been dealing with "unscrupulous characters". In most cases when this has happened, there have been Icelanders involved. We have therefore adopted the policy to make no business with Icelanders living abroad."

(Managing director of a Other EMC)

" There are a number of Icelanders living abroad who have contacted us and expressed their interest in selling fish. I have bad experience from that since early days so I don't respond to such inquiries any longer."

(Managing director of a PIE-4 firm)

6.1.5. Process of Internationalisation

Generally, the process of internationalisation by the exporting firms is characterised by the "export or die" peculiarity of the Icelandic fishing industry, which means firms leap into direct exporting without previous domestic presence.

6.1.5.1. Principal EMCs - Process of Internationalisation

In view of various models on the process of internationalisation of firms the three biggest firms in the export sector; S.H., S.Í.F. and Í.S. have arguably progressed furthest along the internationalisation process as they are the only firms in the sector which are operating foreign sales subsidiaries and have invested in foreign production units. S.H. and Í.S., the two principal exporters of frozen fish products, have followed a similar process of internationalisation. These firms have both established sales offices and invested in secondary processing plants in their main markets.⁸ Both follow a similar policy to not use foreign representatives. Markets which are not served by their foreign subsidiaries are served directly from their head-offices in Iceland.⁹

S.H. set up its first sales office in the U.S. in 1944. In 1947 the company established a fully owned sales subsidiary (Coldwater Seafood Corporation) which started operation of a processing plant (secondary processing) in 1954. Since then the company has opened sales offices in all its other four main markets¹⁰ and in 1983 it established a processing plant (secondary processing) in the U.K. (Icelandic Freezing Plants Ltd)

Í.S. initially used the services of offices which the Samband of Iceland (S.Í.S.) was operating in some foreign markets such as in the U.K. and the U.S. In 1951 the company established its first sales subsidiary (Iceland Seafood Corporation) in the U.S. and in 1958 the Iceland Seafood Corp. opened its first processing plant

(secondary processing). Since then the company has opened sales offices or subsidiaries in its three other main markets.¹¹

S.Í.F.'s process of internationalisation and representation in its main export markets followed a slightly different path to S.H. and Í.S. Initially, the company's selling abroad was through foreign representatives which have gradually been replaced with: sales offices, subsidiaries or production companies abroad. "Our policy is to honour all agreements which were done by our predecessors. When the foreign representatives quit or retire, we replace them by setting up our own sales office or sales subsidiary."¹² The first sales subsidiary in Spain (1990) replaced a sales office which opened there in 1987 but, prior to that, selling was through a foreign representative. In Italy, a sales office replaced a foreign representative in 1960 and in France where the company established its first production plant, it replaced a foreign representative. In other main markets, i.e. Portugal and Greece, the company still sells through foreign representatives. Markets which are not served directly by their foreign subsidiaries are served from the company's head-office in Iceland.

It was generally claimed by managers in these firms that the main benefits gained from replacing foreign representatives with the setting up of sales offices were the closer contact which they usually made with buyers at the foreign markets and some better feeling for customers' requirements and development at the respective export markets. The establishment of sales subsidiaries and processing companies abroad, has not necessarily meant increased volume of exports by these firms to the respective markets, but the general view of the managers in these companies however, was that these firms had generally increased their "commitment" in these markets. By "commitment" they meant the supplying of resources such as raw-material, financial and management resources.

6.1.5.2. Other Exporters - Process of Internationalisation

The general policy and practice of other exporting firms, than the three above listed Principal EMCs, is to sell directly to foreign buyers in the respective foreign markets, and the employment of foreign agents or representatives is largely an exception. The process of internationalisation by these firms, except in the case of some of the PIE firms, has been from their start of operation, exporting by direct selling to foreign buyers and despite their heavy reliance on domestic selling, the PIE-5 firms generally export directly to foreign buyers when entering the export markets. The selling of whole fresh fish on ice and of fish meal and fish oil is through foreign representatives. The order in which these goods are represented abroad seems to be based on three main factors. Firstly, the basic nature of these goods as primary commodities and the way in which many primary commodities are traded i.e. by auction or on spot-prices through international trading. Secondly, is the need of bridging the gap of information between the foreign markets and the Icelandic exporters. The use of agency firms abroad, who are employing Icelanders or are run by people of Icelandic origin explains the importance of this factor.

" It is very common that foreign buyers of fish- meal and oil, don't want to buy directly from producers, but prefer to buy from foreign agents"

(Managing director in a company which is one of the biggest producers of fish- oil and meal.)

" The prices are changing from day to day and even between hours, so if you are not constantly in touch with a foreign agent or correspondent you fall out of tune with what is going on in the market."

(Manager of a Other EMC, which specialises in exporting of fish- oil and meal.)

" I find it's very convenient to have Icelandic agents abroad, especially when the vessels are landing in these foreign ports, but also when we are sending the fish whole on ice in containers. The fishermen frequently ring up these agents to get news about at what prices their fish was sold."

(Manager of a PIE-2 firm)

" We have telefax machines in all our vessels. So immediately after selling at the foreign auction markets, the crews know what prices they have got for their catch. If they are not happy with the prices they ring up these Icelanders in the agency firms to get news about what was wrong with their fish."

(Manager of a PIE-2 firm)

Summary

The various government regulations, such as issuing and abolishing of exclusive export licences to the Principal EMCs, was evidently influential for the creation and initial formation of the export sector, and in causing some of the structural changes which appeared in the sector in the 1980s and beginning of 1990s. A variety of other factors, both 'internal' and 'external' contributed though more significantly to the formation of the Other EMCs and more active involvement of the PIE firms into exporting, during the 1980s and beginning of 1990s. Increasing involvement of PIE-1 firms into exporting derives from factors such as: increasing marketing orientation and enthusiasm among managers in these firms, to much product specialisation of the Principal EMCs, inadequate communication between the PIE-1 firms and the Principal EMCs and a failure by the Principal EMCs to respond to some structural changes within the fishing industry. The choice of first export markets is importantly affected by the type of marine products exported by the exporting firms. Generally, the first export order and selection of first export markets by the Other EMCs and the PIE firms, was not a result of any kind of systematic collection of information or export planning, but was more often based on earlier contacts which the respective persons had made in earlier jobs or through previous experience from living abroad. Figure 6.1. summarizes the main 'internal' and 'external' factors identified in this research which initiated firms direct involvement in exporting of marine products from Iceland. The Principal EMCs have evidently moved furthest along the process of internationalisation by investing in foreign sales subsidiaries and foreign processing plants. The general form of internationalisation by the Other EMCs and most of the

PIE firms is, however, to sell directly to buyers at the foreign markets, without the use of any middle-man except, the exporters of fish oil and fish meal and of whole fresh fish on ice.

Figure 6.1.

Factors Initiating Firms' Direct Exporting of Marine Products.

Internal factors	External factors
Personal Characteristics -- education -- foreign living experience -- entrepreneurial ambitions -- experience in the fishing industry	Technology innovations -- transportation -- communication
Firm Characteristics -- type of products -- organisational objectives -- firm's size	Encouragement from potential foreign buyers Encouragement from domestic processing- and harvesting firms Domestic government regulations and policy Foreign government regulations and policy Favourable market conditions abroad Organisational structure and policy of the Principal EMCs

6.2. Barriers to Export and Problems Associated with Exporting

Various 'external' and 'internal' factors are perceived by the marine product exporters as problems associated with their exporting activity. Generally, these factors are both related to product categories and to the firm's principal activity. 'External factors' are here defined as factors which are outside the direct control or decision area of firms,

such as tariffs and import restrictions at foreign markets. 'Internal factors' are defined as factors which could be controlled by individual firms at least to some degree, such as company size and various company resources.

6.2.1. Seasonal Fluctuations

Despite some regularities in the main fishing season in Iceland, seasonal fluctuations in harvesting and uncertainty about fish supply were seen by many respondent managers as an important problem in their exporting activity. In the exports of fresh fish fillets, seasonal disparity between product demand and supply availability in Iceland was generally perceived as a major problem by exporters of these products.

" There is a very strong demand in December for fresh fillets but then you can't get fish in Iceland."

(Manager in a PIE-4 firm)

Likewise, seasonal fluctuations in the production of fish meal are a major problem for exporters of these products. Geographical distance from the main export markets and limited storage capacity by the reduction plants does, however, strongly relate to this, as currently most of the fish meal production is sold and exported in a bulk form over a relatively short period of time to foreign producers who further process the meal before selling it to end users. This often leads to excessive pressure in the export channels which usually means reduction in export prices.¹³

" It's our main problem that we are producing an immense quantity of fish meal over a relatively short period of time. The reduction plants have very limited storage capacity so we have to sell the meal very quickly. The foreign buyers have exact information about our situation, i.e. about catch, production and distribution channels, so the prices have tendency to go to "hell".

(Managing director, PIE-3 firm)

" If we want to develop this fish-meal industry further, by exporting to new and more distant markets such as in East-Asia, instability in supply is a major problem in such exports."

(Managing director, PIE-3 firm)

More emphasis on the production and exporting of specialised herring products, such as cured fillets, has made the problem of seasonal fluctuations even more compelling in recent years. Since the closing of the Russian market, Iceland's dominant market for whole-salted herring,¹⁴ more emphasis has been put on the production and exporting of specialised products. Exporting of these products however, requires more continuous supply of the product to foreign buyers, which means that seasonal fluctuations are hampering these exports, both competitively and economically.¹⁵

" Even though import tariffs on cured herring fillets may be reduced or abolished in prospective markets such as the German one, we are still incompetent at that market, because we have some extra burdens of inventories costs. The harvesting period in Iceland is only 3-4 months but our main competitors such as the Danes and the Dutch are catching herring in the North Sea the whole year around, except in March and May."

(Managing director, Sildarútvegsnefnd)

Exporters of salted groundfish products, see similar problems arising from seasonal fluctuations in production and supply of salted groundfish products, as those described by the exporter of salted herring. The following remarks made by the managing director of S.Í.F. outline his problem in a nutshell.

" It has happened to us several times, that we haven't been able to supply enough fish to our buyers. Our policy is to retain a minimum stock level. The problem is that nobody is willing to keep stocks, because it means not only some extra financial burden but also some reduction in the physical volume of the product."

Managers in the PIE-5 firms perceive seasonal fluctuations in supply of raw-material as one of their main problem associated with exporting. Managers in these companies, which commonly are using herring and lump-fish roe as the main material in their production, claimed that seasonal fluctuations in fish supply meant that they sometimes had to keep a stock of raw-material for 6-8 months. The increased financial burden of holding stock, often made them uncompetitive and sometimes this instability in supply even jeopardised one of the top priorities of these firms to maintain stability in supply.

"The supply of raw-material is so seasonal, and if for example you don't buy lump-fish roe during the catching season you wouldn't get any later on. Financing stocks of raw-material is therefore, a major problem for us."

(Managing director, PIE-5 firm)

"It has happened to me that I have not had enough raw-material and that is very serious when you are selling consumer packaged products directly to big retail chains."

(Managing director, PIE-5 firm)

Among exporters of frozen groundfish products, seasonal fluctuations are generally not perceived as problematic. This could possibly be explained by the nature of the product¹⁶ but, also by the fact that the two principal exporters of frozen marine products, S.H. and Í.S., account for the great majority of all exports of frozen marine products from Iceland. These firms have as one of their main objectives, to maintain minimum stock level of frozen products, which guarantee continuous supply to their main markets.¹⁷

6.2.2. Restriction in Fish Supply

Many managers expressed concerns over shrinking fish supply in Iceland, due to catch restrictions in Icelandic waters, and managers of the three Principal EMCs exporting groundfish products, perceived this as a severe problem in their exporting, which not only restrained their export expansions opportunities but also, even caused them to lose valuable customers.

"The main obstacle for us is the shortage of fish. We have been in a starving position for the last 3-4 years. It has been very difficult and it puts a lot strain on all channels within the company. This also means that you lose customers which you preferably would have liked to keep."

(Managing director, Principal EMC)

6.2.3. Foreign Subsidies

Subsidies granted by foreign governments to their domestic fishing industries were generally claimed by my respondents as one of the most severe obstacles or problems which their firms had in exporting. Subsidization of substitute products such as agricultural products, especially within the EEC regime, was also perceived as an important problem. Most of the criticism of subsidization was aimed at the two countries Norway and Canada, which generally were seen by my respondents as Iceland's main competitors in the international markets for marine products.

"We are continuously wrestling with difficult barriers in foreign markets, like all exporters of marine products from Iceland. The most severe one is the extensive subsidies which are provided to firms in our main rival countries, i.e. Norway and Canada but also by countries within the EEC. The biggest matter of interests for the Icelandic fishing industry in any forthcoming international trade agreements is that these subsidies will be abolished."

(Managing director of a Principal EMC)

"Our main problem are price fluctuations at foreign markets, but it is also very difficult to fight the subsidization by the Norwegian's which have been very visible"

(Managing director of a PIE-5 firm)

6.2.4. Unfavourable Business Environment

Managers in the PIE firms, and in those EMCs which have strong backward links with companies in the processing and fisheries sectors, frequently stated the high production cost in Iceland, high real exchange rate, fluctuations in foreign currencies and the unstable business environment in Iceland as a problem affecting their exporting activity and providing barriers to their export planning. Labour union policy were also articulated by some of these managers as an indirect obstacle in exporting. The 'unstable business environment' was usually, explained by factors such as uncertainty about government policy and various government laws and regulations relating to the fishing industry, such as the government fisheries policy and export regulations. Factors causing a high production cost were stated as; underutilized production (processing) capacity and high labour costs, but labour union policy was usually referred to as a problem which the processing companies had experienced in implementing a system of time shifts in production at the processing plants.¹⁸

" These fluctuations in the business environment are our main problem and it is certainly an official barrier to export as long as the Icelandic government can centrally decide the exchange rate of the Icelandic króna."

(Managing director of a PIE-1 firm)

" This instability in our business environment is absolutely one of the major problems we have in our exporting, and especially our export planning, as we never know what is going to be the official policy for the fishing industry tomorrow"

(Managing director of a Principal EMC)

" All this mix-up in government rules and uncertainty about future arrangements in the fishing industry is a major problem for us. I am talking about; export regulations, currency regulations, hygiene regulations and so on. It has for example been very difficult for us to prepare in a orderly manner the introduction of new hygiene standard rules in processing plants, set by the EEC, because nobody knows who will control these things in Iceland."

(Managing director, Principal EMC)

" The 'foreign currency exchange rate' has been wrong for many years now. Foreign currency is not different from commodities like cod in that its price depends on supply and demand, whether or not the Icelandic Central Bank understands it or not. If it costs more than 70 ISK to produce the cod-equivalent of one U.S. dollar, but I get only 55 ISK for it when I exchange it in my Icelandic bank, everybody must see that it's ludicrous."

(Managing director, PIE-4 firm)

6.2.5. Paperwork

Paperwork related to exporting was certainly not perceived as a problem within the Principal EMCs, but among some of the smaller exporters in the Other EMCs and the PIE firms, (except the PIE-1), "unnecessary" paperwork required by the Icelandic authorities such as the provision of "Export permits" was claimed as a hindrance in exporting, although it was not described as a major problem.

" The cost which is related to all this paperwork in this company, I mean these export documents, is unbelievable. First you have to get an "export permit" in the Ministry of Foreign Trade, then you have to get "certificate of inspection" in the Icelandic Fish Quality Institution and finally you have to go the Customs Office."

(Managing director in a small Other EMC)

" The only problems I find in this fresh fish exports is all this mess of papers you have to fill out and that you can't export without getting "permissions" from "The Fresh Fish Allocation Board".

(Manager in a Other EMC which specialises in the exports of whole fresh fish on ice)

" This system of "export permissions" where you have to get a special permission for every single export is ludicrous. It has even happened to me that the "men" in the Ministry pick up the receiver on his telephone and rings a competitor and asks him whether he considers my export prices are acceptable."

(Managing director, PIE-4 firm)

Similarly, paperwork relating to regulations in importing countries was not seen as an important problem associated with exporting, except by some of the smaller exporting firms (Other EMC and PIE) which were exporting to France. These firms, complained about problems in exporting to that market because of things such as the language problem in documentation, labelling and other import regulations.

6.2.6. Government Export Regulations

Official limitations, set by "The Fresh Fish Allocation Board" on the amount of whole fresh fish on ice exported to foreign fresh fish markets, was generally perceived by exporters of this commodity as a problem specifically associated with their exporting activity. Exporters of fresh fillets on ice, however, generally perceived the exports of whole fresh fish on ice as the most serious problem they had in their exporting activity as it limited the amount of whole fish auctioned at the domestic markets, and constrained the amount of fish available for domestic processors and the production of fresh fillets. The following remarks made by two of the most prominent exporters of fresh fillets on ice spells out the importance of this factor.

"It has happened frequently that I haven't been able to supply my buyers with the amount of fresh fillets which they needed. The reason is that a lot of the fish which is landed here is exported unprocessed (whole on ice) in containers and never does reach the domestic auction markets."

(Manager in a Other EMC which specialises
in the export of fresh fillets by air)

" Exports of unprocessed fish in containers is a constraint on my exports, as when there is a big quantity of whole fish coming in to the foreign markets, this fish is in direct competition with the fresh fish fillets, which I am selling to these markets."

(Manager of a PIE-4 firm)

6.2.7. Import Tariffs and Quotas

Only managers in firms exporting salted groundfish, salted herring and fresh fillets, perceived any important import barriers at their export markets. These import barriers, which mainly were in the form of import tariffs and quotas, were usually only seen to persist in the EEC market, but no such barriers were referred to in markets such as the U.S. or in Asia. The closing of the Russian market for whole-salted herring seems to have magnified the importance of import tariffs as barriers in exporting of salted herring. The significance of this factor along with seasonal fluctuations in production and supply was viewed as the most severe problem associated with exporting of salted herring.¹⁹ Identically, in the exports of salted groundfish, which is exported almost entirely to the EEC market, import tariffs and import quotas were perceived as the most severe problems associated with exporting these products. Not only are these import tariffs believed to weaken the exporters competitive positions against exporters from other countries in the export markets, but also hamper the domestic position of saltfish producers in competing with frozen-fish processors for the raw-material.²⁰ A similar view was expressed by exporters of fresh fillets, who felt that the 18 per cent import tariff on fresh groundfish fillets at the EEC market, constrained their scope to compete for the raw-material in the domestic market, but also limited their choice of export markets and diversification.

" It's obviously a hindrance in my exporting, this 18% tariff which is on fresh fillets in the EEC market. Now I am only exporting to the U.S. market, but I would obviously prefer to have an option on both markets."

(Managing director of a PIE-4 firm)

6.2.8. Geographical Distance from Export Markets

In my interviews with exporters, it was clearly signalled that geographical distance from export markets is a hindering factor in exporting, even though it is generally not perceived as a major obstacle to exporting. Many respondents felt, however, that the significance of this factor tended to increase with more advanced processing and value-added to products. This was firmly supported by managers in the PIE-5 firms, who generally perceived geographical distance from export markets as a critical factor, as they viewed; delivery, packaging and "shelf-life" as being of absolute importance in the exporting of their products.

" The only barriers which I find in exporting is the geographical distance from the markets. I must be very clear between the domestic processors and the foreign buyers, how the product should be cut and what should be the size and weight of each portion and how its appearance should be in general."

(Managing director in a PIE-4 firm, which specialises in the production and exports of frozen fish portions)

" Geographical distance from the export markets is an obstacle in exporting, even though that is something we can do nothing about. This factor becomes especially critical, when you are exporting products which are fully processed and sold directly to the consumer. These products have normally, a limited shelf life, you must be very accurate in product delivery and the packages are usually more fragile."

(Managing director in a PIE-5 firm)

Managers in firms exporting fish meal generally emphasised the importance of geographical distance from export markets as a barrier to export. The extent of this problem is though, as stated in Section 6.2.1. strongly related to other internal and external factors affecting the export of this commodity.

6.2.9. Relationship with Processors

A considerable number of managers in the Other EMCs mentioned informal and unstable relationship with producers in other sectors of the industry as a problem in their exporting activity. Some managers even claimed that the formal links which the Principal EMCs, especially S.H. and Í.S., have with their member firms was a hindrance in their activity as it limited their scope in offering their services to these firms even on a limited basis.

" 'The big sales organisations' are to some extent an obstacle in exporting as their members are bound with very strong ties to them. To get access to the producers and to get the product is a barrier."

(Managing director, Other EMC)

The problem of unstable relationships with producers was usually directly related to the excessive price orientation by the producers, which often made them switch between exporters on the basis of what prices the different Other EMCs were offering. In an attempt however, to increase interdependence between them and the respective producers, many of the Other EMCs have provided the processing firms with loans to finance buying of things such as packaging and raw-material.

" Recently it happened to me that we couldn't honour a contract of selling frozen shrimps to one of my buyers in Denmark. The reason was simply that the producer didn't stick to his words and sold it to some one else for I suppose a higher price."

(Managing director, Other EMC)

" It's very difficult to offer specific products for sale when you in fact don't know whether you have them for sale or not. It happened to me that I had sold to a foreign buyer a certain amount of plaice fillets. When they were about to be loaded in a container and exported, the processor suddenly changed his mind and sold it to someone else as he now felt the price was too low."

(Managing director, Other EMC)

" There is at least one producer which I will forget to contact in the next few years or so. In my relationship with him it has happened at least twice that we have agreed on all conditions made by the foreign buyer and the prices as well. When it came to the stage that he should package and freeze the products he had changed his mind."

(Managing director, Other EMC)

" We can say, that we often behave as the banks do in getting the grasp of the customer, i.e. you lend them some money. Study who these processors are, which we are exporting for and why they are not within the big sales organisations (S.H. Í.S. S.Í.F.)! These on-shore producers, which I and many other of these smaller exporters are in contact with, are often more wobbling producers both financially and production wise."

(Managing director in one of the biggest Other EMC)

6.2.10. Transportation and Transportation Cost

In the export of fresh fillets, limited air-transportation capacity and high freight costs were generally perceived as very severe problems by exporters of these products.

"The only obstacle I have in exporting is the limited space we can get in the aeroplane, and the cost of this transportation."

(Manager in a small Other EMC, which specialises in exports of fresh fillets to the U.S.)

Similarly, exporters of fish meal expressed high transportation cost as a very severe problem, which hampered their competitive position at the main fish meal markets in Europe, against exporters from countries like Norway and Denmark and even more distant countries.

" Transportation is a very severe problem in the fish meal exports. We are currently paying between 40 and 50 per cent more for each tonne of fish meal from Iceland to Hamburg in Germany, than exporters in Chile are paying for the same quantity from Chile to Hamburg."

(Managing director, Other EMC)

" Our transportation problem is: if we want to export fish-meal directly to a final buyer in Taiwan inter alia, about 2/3 of the transportation cost would be to a trans-shipment port in Europe but only 1/3 from Europe to Taiwan."

(Managing director, Other EMC)

6.2.11. Fluctuations in Prices and Demand at Foreign Markets

Fluctuations in prices and demand in the export markets was stated as a severe problem associated with exporting by many exporters of fish oil and fish meal, and by exporters of whole fresh fish on ice. By the exporters of various frozen and salted products such as of frozen shrimps and frozen and salted groundfish products these fluctuations were also stated as an important problem and even a more severe one, by those mainly exporting products processed and frozen-at-sea. It appeared however, that in the exports of more advancedly processed products, such as those exported in consumer packaging, this problem was generally stated by managers as being much less valid.²¹

" I can't deny that these price fluctuations are a difficult problem in the exports of what I would call our "core products" i.e. the land-frozen fillets and blocks. In the "special products", which are mainly these products in retail packaging, however, we see more stability in prices."

(Managing director, Principal EMC)

6.2.12. Banking Services

Only managers in some of the Other EMCs perceived problems in exporting related to banking services. Services most frequently mentioned as lacking by Icelandic banks were factoring,²² and information about the credit standing of potential foreign buyers. Limited services in international business, offered by banking branches outside Reykjavik, were also frequently mentioned by managers in firms located in regions outside Reykjavik as a problem associated with their exporting activity.

Summary

This section has outlined all the main 'internal factors' and 'external factors' perceived by managers as obstacles or problems associated with exporting. Many of the factors identified as problematic appear to be importantly related to various firm characteristics such as their principal activity and type of products exported. The 'internal factors' identified in this research as obstacles or problems associated with exporting were: relationship with processors, transportation cost, paperwork, and banking services in Iceland. The 'external factors' identified were: seasonal fluctuations in fish supply (catch) in Iceland, supply shortage due to catch restrictions in Iceland, foreign subsidies, import tariffs and import quotas, fluctuations in prices and demand at the export markets, unfavourable business environment in Iceland, government export regulations in Iceland and geographical distance from export markets. (Figure 6.2).

Figure 6.2.

Main Problems or Obstacles Associated with Exporting of Marine Products.

Internal factors.

Relationship with processors.
Transportation and transportation cost.
Paperwork.
Banking services in Iceland.

External factors.

Seasonal fluctuations in fish supply.
Supply shortage due to catch restrictions.
Foreign subsidies.
Import tariffs and import quotas.
Fluctuations in prices and demand at export markets.
Unfavourable business environment in Iceland.
Government export regulations in Iceland.
Geographical distance from export markets.

Conclusions

The process of internationalization by the Icelandic marine products exporters is largely characterised by the "export or die" peculiarity of the Icelandic fishing industry, which means that the firms leap straight into exporting without prior development in the domestic market. There were both 'external' and 'internal' factors which initiated the establishment of most firms in the export sector. Similarly, it is argued that the initial structure and formation of the sector as well as the apparent structural changes within it in the 1980s and the relative changes in size of different export markets for marine products from Iceland are a result of these various external and internal factors. 'The relative closeness' of the European market compared to the U.S. market, as felt by managers in many of the smaller and younger firms and the experience which many of these managers had from living abroad, were evidently vital in bringing these changes on. In general, the various internal factors identified as export barriers appear to be less problematic than the various external factors. Internal factors seem also less problematic for managers in the Principal EMCs, than they are for some managers of the Other EMCs and the smaller PIE firms. The external factors, identified could broadly be categorised as either 'industry specific' or 'country specific'. 'Industry specific' factors identified were: seasonal fluctuations in the fish supply; supply shortage due to catch restriction; subsidies granted by foreign governments; import tariffs and quotas at the export markets; and fluctuations in prices and demand at the export markets. 'Country specific' factors identified were: unstable business environment in Iceland; domestic government regulations; and geographical location. From the analysis of the interviews, this research concludes that, for the export sector in general, the most problematic 'external factors' in exporting are the 'industry specific' factors of: seasonal fluctuation in the fish supply; fluctuations in prices and demand at the export markets; and supply shortage of fish; and the 'country specific' factor of unfavourable business environment in Iceland.

References Cited

- ¹ The formation of these firms is outlined in Chapter 3
- ² "In his study on the supply of whole fresh groundfish on ice from Iceland to the markets in the U.K. and Germany, Kristgeirsson, suggested that this might be the case. " Kristgeirsson, Sigurgeir B. Framboð ísaðs botnfisks frá Íslandi. Unpublished Cand-Ocean. thesis, University of Iceland. 1991, page 83.
- ³ Excluding Sildarútvegsnefnd.
- ⁴ These structural changes, which also spurred the establishment of many Other EMCs, appeared in: an increasing number of freezing trawlers, growing demand for fresh fish at some of the principal fresh fish markets in Europe and the emergence of domestic fresh fish auction markets.
- ⁵ In his book " Sjóvarútvegur Íslendinga á tuttugustu öld" Sigfús Jónsson, gives some good accounts of the situation which remained in the exports of marine products from Iceland in the early 1940s and the establishment of the Principal EMCs.
- ⁶ Friðrik Pálsson. Interview 15.06. 1992
- ⁷ Tesar, George and Tarleton, Jesse S. " Comparison of Wisconsin and Virginia small- and medium-sized exporters: Aggressive and passive exporters. " in Export Management. An International Context. Ed. Michael R. Czinkota and George Tesar. Praeger Publishers, N.Y. 1982.
- ⁸ S.H. has sales subsidiaries in: France, Germany, Japan and secondary processing plants in the U.S. and the U.K. Í.S. has sales subsidiaries in: France, Germany, U.K. and secondary processing plant in the U.S.
- ⁹ Friðrik Pálsson, Managing director of S.H. Interview 15.06.1992 and Benedikt Sveinsson, Managing director of Í.S. Interview 02.06.1992
- ¹⁰ Friðrik Pálsson, Managing director of S.H. says the company has five main markets, i.e. the U.S. the U.K. France, Germany and Japan. Interview 15.06.1992
- ¹¹ Benedikt Sveinsson, Managing director of Í.S. Interview 02.06.1993
- ¹² Sigurður Haraldsson, Managing director of S.Í.F. Interview 29.06.1992
- ¹³ Interview, Managing director of a Other EMC
- ¹⁴ Iceland has in the last years been the biggest exporter of salted herring in the world. (Information from Einar Benediktsson, Managing director of Sildarútvegsnefnd.)
- ¹⁵ Einar Benediktsson, Managing director of Sildarútvegsnefnd. Interview 15.05.1992
- ¹⁶ The following description, made by one of my respondents in an Other EMC, might explain the difference between frozen marine products and other marine products: " When you primary process fish and freeze it, your main aim is to preserve it for later production and you don't change the condition of the product. When you defrost it, it remains unchanged, even though, there may be some speculations about the quality of it. On the other hand, when you smoke, salt, or dry the fish you have changed its condition permanently. In this case you are producing a product, but when you are freezing it's more for reasons of preservation.

¹⁷ Friðrik Pálsson, Managing director S.H. Interview 15.06.1992 and Benedikt Sveinsson, Managing director, Í.S. Interview 02.06.1992

¹⁸ Many of my respondents claimed that the big increase in processing- and freezing-on-board the trawlers was *inter alia* a result of this labour union policy .

¹⁹ Einar Benediktsson, Síldarútvegsnefnd. Interview, 15.05.1992

²⁰ Sigurður Haraldsson, Managing Director S.Í.F. and Ásbjörn Björnsson, Sales Director, S.Í.F. Interview 29.06.1992

²¹ This view was substantiated by Mr. Höskuldur Ásgeirsson, Sales Managers of Iceland Seafood Ltd in Europe, (subsidiary of Í.S.) in the Icelandic newspaper Morgunblaðið, 27.06.1993 when he was quoted saying: "The prices of haddock in block or interleaved fillets has dropped between 20-25 per cent, since this time last year. The prices of 'special package' is however much more stable."

²² Pearce, David W. The Dictionary of Modern Economics. MacMillan Press, London 1983. defines it as: A method of disposing of trade debts where a company 'sells' these debts to a financial institution."

7. Export Strategy and Marketing Management

Introduction

This chapter outlines the main objectives and emphasis in exporting by the firms researched and how these different objectives might relate to various firm's characteristics such as the main products exported by these firms. It endeavours to explain differences in the firms' export marketing management and behaviour such as their export planning and research, marketing staff characteristics and the firms' use or non-use of the marketing mix. Finally, it explores how the managers interviewed in this research viewed the performances of their firms in exporting and their evaluation of the main strengths and weaknesses of their firms in exporting. This chapter is based on the same informal interviews as chapters 5 and 6.

7.1. Objectives in Exporting

It appeared in the interviews that, generally, the exporting firms retain no specially written statements of objectives in exporting and only the Principal EMCs have set themselves some written by-laws or resolutions, outlining their basic role and mode of operation. Despite this, managers in the Principal EMCs, and in some of the other firms as well, articulated some underlying objectives or policies in exporting which their respective firms had developed and were following in their exporting activity. Even though it would be a serious over-simplification to argue that the whole export sector is primarily directed by prices, it was clearly recorded in the interviews with exporters, that all the firms in the sector tend to put much emphasis on seeking highest possible prices in exporting each time.

"Of course, we are too much directed by prices, and that applies as much to the big 'sales organisations' as to the smaller exporters. The difference is that we have a better chance to oversee some of these more 'short-time' price fluctuations than the smaller exporting firms."

(Managing director, Principal EMC)

"Unfortunately, it increasingly happens that we are directed by prices, which means we are seeking for the highest possible prices at the export markets and shifting from one export market to another."

(Managing director, Principal EMC)

When explaining this increasing emphasis on prices, managers frequently argued, it as being the result of three main factors. First, the nature of some of the export products, i.e. as unprocessed or semi-processed primary commodities which are significantly traded at international spot-markets.¹ Second, the serious and long lasting financial crisis which many firms in the harvesting and processing sectors have experienced in the recent years (see Section 3.3.7.). Third, the share based salaries system in the harvesting sector, which many managers in the exporting firms claimed increased the pressure on them to seek for the highest possible export prices each time.²

"The export is rather price oriented. When prices are rising then the producers are always searching for the highest possible prices but when times becomes a little bit more bleak and you may have difficulties in selling, then the producers frequently proclaim that they are not necessarily looking for the highest prices but more for some stability in delivery and long term contracts. When prices again turn in their favour they tend to forget this however. I think however, that this short sightness by the producers is quite reasonable when you consider that 99% of our exports is raw-material."

(Managing director in a middle sized Other EMC
which mainly exports frozen shrimps.)

"This price orientation which we are describing as a short sightness by the producers, is I think quite understandable. If you consider the unfavourable business environment which these firms are usually operating within, and the financial position of most of these companies, where every day is a battle to keep your cheque account in order, I think that explains a lot. You tend to feel that you can't afford to get some few cents lower prices for your exports."

(Managing director, Principal EMC)

"As the fishermen are able to always demand the highest existing prices for the raw-material (fish), as is currently stipulated in a 'wages agreement' between the fishermen and the vessels owners, it is very difficult to guarantee continuous supply to the foreign buyers except that you as a producer pay always the highest prices. Business which is supposed to take some long-term view in its pricing decision must however, sometimes be ready to accept some price cuts. To convince the Icelandic fishermen about that is, however, deadly impossible."

(Managing director, Principal EMC)

"It is not enough to convince the producers about the importance of the long-term view in pricing policy. You also have to convince the fishermen as they are an important link in the chain. It is however, only one thing which the fishermen have on their mind, and that is to get higher prices as in the share based system that will give them higher salaries."

(Managing director, Other EMC)

Despite some emphasis on prices, the overriding objectives in exporting of the Principal EMCs rest around two principal factors: product quality and reliability in product delivery. Additional objectives of these firms, indicated by their managers, were: to get as close to the final consumer or user as they possibly can in their exporting; the build up of their own brand names and labels at the main export markets and; the establishment of long-term relationships with their foreign buyers. Among the Other EMCs the underlying objectives in exporting are usually, less specified than by the Principal EMCs, and more diverse. Their main aims appear to be related more to the different products exported by these firms than to various firm characteristics, such as size and age. Generally, however, managers in these firms emphasised the importance they attached to selling only quality products and to building up some long-term relationship with foreign buyers. The main objectives of firms exporting whole fish on ice in containers, fish oil (crude oil) and fish meal seems generally to be the seeking of the highest possible prices available each time at the export markets, but also receiving quick payments for the products exported.

Similarly, it was strongly indicated in the interviews that exporting of various products frozen-at-sea is largely driven by these highest price seeking and quick payment factors, even though managers in firms exporting these products, of which many are Other EMCs, used to express some strong desire to build up long-term relationships with their foreign buyers. Relatively loose ties between many of these firms (Other EMCs) and the processing and harvesting firms seems, however, often to override their intention, making them chiefly focus on the prices.

"This branch is totally price oriented and the producers tend to take always the highest bids. So obviously, one of our main objectives is to look always for the highest possible prices."

(Managing director, Other EMC, which specialises in the exporting of fish meal)

"The main weakness in this exporting is that there exists no long-term views by the producers. They are always looking for the highest prices."

(Managing director, Other EMC, which specialises in the exporting of fish oil)

"These exports are mainly based on the prices you can get, but also on being able to sell quickly. It is our policy to sell quickly but not to build up some stocks of the product..... When we decide who we sell to we look at what volume these buyers are ready to take. There are some buyers who don't pay higher prices than up to a certain level and then you may have to switch to other countries and markets."

(Managing director in a Other EMC which is one of the biggest exporters of sea-frozen products.)

"Sea-frozen products (fish) are by nature a much more 'spot-market' commodity than the various land-frozen products as there are much more fluctuations in production when you are processing and freezing at sea than when you are processing and freezing onshore. Production planning is much more difficult in the sea-frozen production than in the land-production, which means that there are much more fluctuations in supply of the product and in its prices."

(Managing director. Other EMC which is a big exporter of sea-frozen products)

Among the PIE firms the underlying objectives in exporting seem to be similarly diverse as among the Other EMCs, and mainly related to the principal activity of these firms and their main export products. The main objectives of the PIE-1 firms, which are key producers of products exported by the three main Principal EMCs, are generally associated with the main aims of the Principal EMCs. For these firms the main focus is on product quality and reliability in production and delivery. Increasingly, though, these firms are putting emphasis on establishing some direct relationship with the foreign buyers of products exported by the Principal EMC, especially those which are producing some special products such as various groundfish products in retail packs. In their direct exporting, which is largely of whole fish on ice, fish meal and fish oil, these firms mainly seek for the highest possible prices. In the PIE-2- and PIE-3 firms, the main emphasis in exporting relates strongly to the nature of the products they are exporting. The main emphasis by these firms is therefore usually on export prices and the receiving of quick payments. The notable differences however, between these firms and the Other EMCs exporting similar products, was that the managers in the PIE firms generally expressed more enthusiasm in building up some long-term relationship with foreign buyers, than managers in the Other EMCs. Building up long-term relationship with foreign buyers was also the most frequently stated aim in exporting, by managers in the PIE-4 and PIE-5 firms, along with the intention to sell as close to the final consumer as possible. Although, many managers in the PIE-4 and PIE-5 firms, stated their desire to build up their own product labels and brand names most of them recognised the limitations they had in doing so, at least in the exporting of consumer packaged products, mainly for the reason of their small size.

"Our aim and future export policy is very clear. We are going to put as much as we possibly can of our production of medicinal cod-liver oil in consumer packaging. Whether, it's under our own labels or under the labels of some foreign buyers is a sub-issue."

(Managing director of a company which is a world leading producer of medicinal cod-liver oil.)

"I find it's immensely important to establish long-term relationship with my foreign buyers as that's the base to build on some of my future aims in exporting such as to maintain the existence of the 'brand name', which, I believe could become one of my most valuable assets in the future."

(Managing director, PIE-4 firm)

7.2. Export Organisations and Management

This section will examine, whether and how the different type of firms included in this research undertake the various elements of the export organisation and export marketing management.

7.2.1. Export Planning

Uncertainty at both ends of the marketing chain, i.e. in supply and demand, is one of the peculiarities of the fishing industry and a characteristic which distinguishes it from most other industries. Despite all my respondents being generally very aware of these problems there remains a big difference between the exporting firms in their extent of export planning. Generally, only the Principal EMCs seem to be undertaking some formal export planning and in these firms, centralized planning and control in exporting and even production is one of the centre-pieces in their operational strategy. Despite the fact that the member firms of the Principal EMCs principally make all decisions about what they produce each time, the Principal EMCs have a central role in informing and persuading their members each time, in what to produce, in what packaging and for which markets.³ This means that in the PIE-1 firms, all planning activity is importantly linked to that made by the Principal EMCs. In other PIE firms,

the very limited extent of planning is usually more centred around the production side of their operation, rather than the export and marketing side. Managers of the Other EMCs frequently stated that formal export planning was "meaningless" and a number of managers in these firms felt that the nature and volume of their business did not offer any scope for such formal export planning. By the phrase "meaningless" managers commonly meant the extent of uncertainty which existed firstly, in demand and prices at the export markets and secondly, in the amount of products available for exporting and which often was quoted as the result of two main factors, i.e. loose ties with producers and uncertainty in catching. Many of the managers in the exporting firms felt however, that the "quota system" in fisheries had had a positive impact on reducing the uncertainty in the fish supply.

"We plan every stage of the production and export process, i.e. from the vessel to the foreign buyer. This plan is then monitored every week, so we can see how far away we are from our targets and where the deviations are. 'The producers' are all collaborating with us in making these plans and every year we have a formal meeting with 'the producers' where we explain these plans. Our export plans, which follow the 'quota year' but not the calendar year, are usually based on some past information about the development at the export markets, prospective information from our foreign buyers and last but not least, various information from the producers such as the size of their 'quota' and their plans of production. In our case it has for example major effects on what is going on at the saltfish markets as we are talking about the same raw-material."

(Managing director. Principal EMC)

"We practice some substantive consulting with 'our producers' in what to produce. At least every month in the 'standard products' and every day or more, in products which are more sold on a 'hot basis', we send out information about the market conditions. The decision obviously lies with the producers about what they produce but we try our utmost to direct their production into those avenues which we feel are most desirable with the hindsight of development in prices and our level of stocks."

(Managing director. Principal EMC)

"I don't even try to make any kind of export plans and it's totally useless in this branch, but at the end of each month I make a statement of my sales performance and compare it to my previous performance. I find that is quite imperative if you want to make some progress."

(Managing director, PIE-4 firm which is one of the biggest exporters of fresh fillets)

"We don't make any special exporting plans, but we make some annual plans about how we intend to behave in our harvesting activity. This is where we benefit from the 'quota system', as I know exactly how much quantity I have available of each species each year and I can tell my foreign buyers when I am going to let our trawlers catch the specific species."

(Managing director, PIE-2 firm which is one of the biggest producers of products frozen-at-sea)

"We make no export plans. There are so many uncertain factors. Let's take for example Nigeria which is one of my main export countries. There you only need one government decision, such as the imposing of import restrictions and all your exports to that market are stuck for maybe some months, as has happened to me."

(Managing director, Other EMC)

"It's very difficult to make any export plans. You will for example not know in advance what size of shrimps you will get. That was among some of the reason which pushed one of my producers out of the business. We had made some sales agreement with foreign buyers about the selling of large-sized shrimps. Unexpectedly, however they only caught some small-sized shrimps that year and then small-sized shrimps which the producer was buying from the vessels at some pre-fixed prices piled up in stocks."

(Managing director, Other EMC)

7.2.2. Export Management and Marketing Staff Characteristics

As outlined earlier, one of the main characteristics of the EMCs is their specialisation in exporting. Apparently, though, there is a big difference between the Principal EMCs and most of the Other EMCs in how the exporting activity is managed. Within the Other EMCs, the managing director, who usually is the principal owner of the firm, is mainly responsible for most decisions within the firm, such as the making of most export deals and keeping in touch with stakeholders such as foreign buyers and domestic producers. Typically, in these firms there are one or two persons working on paperwork and in the case of the larger Other EMCs the owner has commonly hired one or two sales assistants. The PIE firms have a similar structure i.e. with the managing directors generally playing a central role in all exporting decisions and in closest touch with outside parties related to the exporting activity. Even though some of the bigger PIE firms are structured and organised on a departmental basis, only one of the PIE firms (none of the PIE-1 firms) had a specialised sales and export department, employing people who are mainly working on exporting issues. The Principal EMCs are much more formally structured than the Other EMCs, and in all cases organized on a departmental basis. Within the three "principal export organisations" (S.H., Í.S., S.Í.F.) day to day relationships with producers and foreign customers, and decisions related to exporting are usually in the hands of people within some of the respective departments, or in the hands of their people in any of their foreign subsidiaries. In hiring sales and export marketing staff the general requirements made by the Principal EMCs to such people are however, ostensibly different. The main criterion, as explained by the managing directors of these firms, ranges from being, as in one of the firm based on the amount of knowledge the prospective candidates have of fish and fish products, to the practice in another of these firms, as being more based on the knowledge the prospective candidates have in selling and export marketing. For some obvious reasons, most of my respondents in the Other EMCs, claimed to have no such general criteria. Five of the thirty Other

EMCs, however, were employing sales people of foreign national origin, which in all cases were people for whom English was not the national language but from countries where the respective managers claimed they intended to increase their exporting activity.

"The requirements we are making to our employees are gradually increasing. One needs to have a generally good educational background and some good knowledge of the fishing industry. If you can't explain to a potential buyer that you are selling a much better fish than any one else and why it's better, I would say that you were not able to be a sales person in this company. To be able to retain some power over your customers, you must have quite a lot of know-how"

(Managing director, Principal EMC)

"I have quite a strong opinion myself, that if you find an individual who is a good marketing and sales person it's relatively easy to teach him about the product itself. It's however, hellish difficult to teach an individual, who is not by nature or by instinct a sales or marketing person to be good in that."

(Managing director, Principal EMC)

"It's very different to start exporting to the different markets. We for example hired a Spaniard who first came here as an exchange student. With his arrival our business with Spain has increased significantly. I found it very important to hire a Spaniard before we went into that market because of the language."

(Managing director, one of the
biggest Other EMCs)

"Our exports to France has shown the most increase and I hired a Frenchman to look after that market. It was very important to get a man who speaks the language and understands their culture."

(Managing director, one of the
biggest Other EMCs)

7.2.3. Export Marketing Research

Over all, firms in the export sector are undertaking a very limited amount of any export market and marketing research or export studies. The very limited amount of export marketing studies appears to be undertaken by the three principal exporting firms (S.H., Í.S., and S.Í.F.) which are the only firms which strategically allocate financial resources for that purpose even though none of them are committing special people to the task. Generally, the managers of firms which are exporting more highly processed products expressed more enthusiasm for undertaking export-marketing studies than managers in firms which are exporting unprocessed or primary processed products. This is also reflected in the nature of marketing research undertaken by the three principal exporting firms, where research has usually focused on their exporting or prospective exporting, of various value added products or the marketing of products manufactured by any of their foreign based secondary-processing plants. These marketing studies have, however, generally been carried out by outside experts or consultancy firms but not made in-house. Very few of the firms in the sector had used the export services provided by the Icelandic Export Council and many respondent managers held apparently negative attitudes towards the current function of the Export Council, especially those in the smaller firms.

"The main weakness of our function is the collection of various market and marketing information. We are, first and foremost, some production controllers and export sellers, but we have no strong marketing arm within the company, even though we are now developing a special division which looks after research and development and also some export marketing."

(Managing director, Principal EMC)

"We make no export marketing research in-house but we have occasionally bought such services from foreign individuals or firms. In most cases we have been very satisfied with the results which we have got from this research and they have backed our decisions. The problem is that much of this foreign research is relatively expensive."

(Managing director, Principal EMC)

"We spend some time and money on studying the export markets but we do no marketing research. The volume of our business is not on such a scale that it offers you such things."

(Managing director one of the biggest Other EMCs)

"We do no market studies or marketing research. I have been of the opinion that as long as we have plenty on our hands there is no need for us to spend money on such things."

(Managing director, one of the biggest Other EMCs)

"The Export Council is not my business. I have not used their services and I don't think I will do so in the future. I have seen some of their reports and I very much doubt whether any of them has been of any use for anybody. This body is more or less governed by the "big export organisations" who have their people on the board of the Council and there is no room for our voice within this organisation..... In my opinion the Export Council has failed to define its role and I don't understand their daily operation or choice of projects."

(Managing director, one of the biggest Other EMCs)

"Certainly we have used the services provided by the Export Council. I find, however, that it's regrettably little we can get from them. It's maybe our own fault, even though I believe that you usually, seek for the services which you expect to get. The various marketing studies and reports on marine products made by the Export Council have never been of any use to us, maybe because they have all focused on areas where we are already operating."

(Managing director. Principal EMC)

7.2.4. Uses of Marketing Mix

A strategic use of the marketing mix i.e. the four commonly identified variables product, place (market/distribution), price and promotion seems in this study, mainly to be limited to certain firms in the export sector and to the exporting of particular marine products. The following sections examine each of the four above listed variables and the use or non-use of them by firms in the sector.

7.2.4.1. Product

Two factors firstly, to adapt products in accordance with foreign buyers' requirements and secondly, to maintain high standards in product quality, were commonly argued by managers, as being of most importance in their use of "product" as a part of their export marketing. Regarding other product related factors, like branding, packaging, and product research and development, some logical differences remain amongst firms, mainly on the grounds of the type of products they are exporting.

7.2.4.1.1. Product - Quality Standards

Exporting of commodities like fish meal and fish oil, usually adheres to some internationally accepted product standards, embodying criteria such as product freshness and chemical composition,⁴ In the case of "standard" frozen groundfish products,⁵ product and quality standards have significantly been developed by the two leading exporters, S.H. and Í.S., especially through their long standing exports to the U.S. market. These standards, laid down by S.H. and Í.S., have since been largely adopted by other exporters of frozen groundfish products from Iceland, as was commonly admitted by the managers in these firms. In the exporting of various other frozen products, such as products which could be described as more specialised or value-added and consumer packaged products, product and quality standards seem to be more variant and tailored to the requirements of individual buyers. Despite the emphasis on product quality as a top priority in exporting, the way in which this is controlled by the exporting firms remains significantly different. All the Principal EMCs employ some kind of a centralised system in their provision of information to producers concerning product quality standards and other product requirements, despite making the individual producers predominantly responsible for the quality level of their produce. Within the Other EMCs generally, no organised quality systems remain in effect but managers in these firms frequently stated that they

personally endeavoured to make some product inspection before shipping off the products. Even though managers of these firms usually argued that product quality primarily rested with their respective producers, many of these managers also perceived the lack of a comprehensive product quality system as one of the weaknesses in their exporting activity. In the exporting of whole fresh fish on ice in containers, exporters generally undertake no quality scanning, and responsibility for which fish is exported is left to the individual vessel owners. Admittedly, many exporters of whole fresh fish on ice perceived the state of quality of this fish as frequently very poor as was its image in the foreign markets.

"It applies to all our groundfish products, that we get some higher prices in the U.S. market than we are getting in other markets. This is though, mainly because the products exported to that market are usually more developed than to other markets. Increasingly however, we have seen other markets demanding these products, which means we are utilising our product development made in the U.S. market in the beginning of the 1980s."

(Managing director, Principal EMC)

"We are not employing any special people who are monitoring quality control or carrying out product quality inspections by our producers. What we do, however, is that we provide our producers with printed production and product specification guide-lines which also includes various quality marks requirements.....These guide-lines are usually made by us in co-operation with the respective foreign buyers, but in the case of the standardised products such as of frozen- fillets and blocks we have been using the guide-lines issued by the 'sales organisations' for their producers, although we usually put them into a new cover."

(Manager Other EMC, which mainly is exporting frozen marine products)

"Most of our sales contracts include some special clauses which include details about the products to be exported, such as their size, quality and type of packaging. It differs a lot between markets what the requirements are, and we inform our producers by hand of all the changes which are taking place there. Every year, we

run a special course or a seminar for the producers, where all these issues of product standards and quality requirements are covered. Last but not least, we are employing 6-7 inspectors who travel between the producers and advise them on various things in their production, and they take product examples for quality testing. Despite this, after the producers have received from us all information about quality etc, the final quality of their products remains chiefly in their hands."

(Managing director, Principal EMC)

"When you mention product quality control, you are touching on a very sensitive area in our operation and on one which we feel we definitely have to improve in the future. We supply our producers with certain 'specifications' regarding product quality for use in their production. What we lack, however, is some kind of an internal system where every producer controls product quality, and that is something we are now looking at. If this company was of the size that it was exporting more than 2 thousand million ISK, there would be some grounds to employ a special person to look after these things, as is done by the 'big sales organisations'. We, however, are spontaneously running and taking some random samples for testing, even though we have learnt to know whom we can trust and whom not."

(Managing director, one of the biggest Other EMCs)

"My quality inspection system is obviously very constrained as I am alone in this company. I usually, try to go and have a look at products during their processing or production. I know where they buy the fish and usually by which vessel it was caught. You start to learn which vessels and which producers tend to handle the fish properly and that some producers are more identified with quality products but others more related to quality complaints. The thing is, therefore, to visit the producers as often as you possibly can and have a look. "

(Manager, in a small Other EMC)

"There is no quality examination on the fish which we export in containers. Everything is just shovelled into the containers. If we feel it's a very good fish we sometimes attempt to put it into a separate container..... Compared to the frozen fish, I think the image of the fresh fish which is exported whole on ice is rather poor, among foreign buyers."

(Managing director, PIE-2 firm)

"I feel the image of this fresh fish is not as good as we sometimes want to believe. Much of this fish is simply too old "

(Managing director, Other EMC which specialises
in exporting of fresh fish in containers.)

7.2.4.1.2. Product Research and Development

It was a general view among managers that, over-all, far too little resources had been spent by exporters and producers of marine products on research and development, and far too little had been achieved in that area during the last decades. Consequently, most of these managers recognised product research and development as being a key issue in the future development of the industry although only the Principal EMCs and one PIE-5 firm seemed to be strategically committed to laying out money for that purpose.⁶ Managers in two other firms (PIE-5 and Other EMC) also claimed some tangible spending on research and development, mainly through their operation of special product laboratories, though they admitted these were mainly used for product quality testing and issuing of 'product quality certificates' rather than for direct product research and development.

It was the view of many managers that the relatively little attention and progress which had been given and made in product research and development in the last few decades could significantly be blamed on various tariff barriers which have existed at the export markets. Another argument made by managers, especially in the Other EMCs and the PIE firm related to the relatively small size of their companies and their belief that the small size of their firms did not give them realistic opportunities to spend significant amounts of money on research and development. Many Other EMCs managers also felt that it would be very difficult to get adequate support from their respective producers as many of them seemed to be very price oriented and weak financially, and did not have any tolerance in waiting for results from product research and development. Despite somewhat similar comments made by managers of the Principal EMCs, managers of the PIE-1 firms generally felt that their collective

spending on research and development made through their membership of the Principal EMCs was one the main strengths of their membership in these firms.

"Product development and product quality is a top priority in our future export plans. I don't hesitate to say that our system of tight product quality control and the emphasis which we have put on a steady product supply has been the pre-eminent factor behind the trust which we have created in our export markets."

(Managing director, Principal EMC)

"We are not spending any money on product development at the moment but, we have recently become co-partners in a 'research company' which had recently been established. We are determined to spend money in this area in the future because, if you are going to rely on the exports of commodities or homogeneous products in the future, you will always be dependent upon these big price fluctuations in the markets. I suppose 'the big sales organisations' are partly using their sales office abroad for sounding the markets, but I think we must instead work more closely with our foreign buyers on these things."

(Managing director, Other EMC which is mainly exporting landfrozen products)

"We have set ourselves some objectives in what percentage of our total income we will spend on product research and development."

(Managing director, Principal EMC)

"Product development has very much been constrained by various tariff barriers which have existed in several foreign markets. Good examples of this are the U.S. market for frozen fish and the European market for fresh fish. As the fish or the products become more value added the higher becomes the tariffs."

(Managing director, Principal EMC)

"The tariff system has definitely been a hindrance in all product development, such as in the developing of products in consumer packaging. This is because as soon as we start packaging fillets or cut fish portions into vacuum packaging, we get some 20 per cent tariff imposed on. However, when the fish is exported flat as we are mainly doing now there is no tariff, at least up to a certain quantity."

(Managing director, Principal EMC)

"I think I am perfectly honest when I say that these smaller companies like mine are not likely to make much contribution to product developments. We are maybe best in sudden attacks and gorilla fighting. Product development is, however, very important for this business and I think 'the big sales organisations' are much more likely to make some successful contribution in that area than we are."

(Managing director, Other EMC)

"In Finland we managed to get into business with the second biggest retail chain which also holds 60 per cent of the 'cash and carry market' in Finland and 50 per cent of the 'catering market'. Our exports of retail products are under their own labels but under our labels for the 'cash and carry' and 'catering' markets. A very important factor, which undoubtedly enabled us to take this inroad into the retail sector, were our capabilities in amending our products to their requirements. This meant we could avoid any spending on advertising and promotion."

(Sales Manager, PIE-5 firm which has its own research laboratory)

7.2.4.1.3. Packaging and Branding

The use of own brands and labels in product exporting is evidently a policy which is most established within the Principal EMCs, as literally all the export of these firms is under their own labels and brand names, except some of their export in retail or consumer packs. It was a general view among managers of these firms that the generally long-established product brand names used by these firms were in all cases significantly associated with product quality in the mind of their foreign buyers and one of these firm's major assets. Similar views were expressed by managers in the PIE-4 firms, although they generally admitted the limitations of promoting their brand names widely. Within the Other EMCs, there is generally much less emphasis placed

on exporting under own brand names, and more often than not these firms are exporting under the different brand names of their producers. Managers in Other EMCs, which have pursued as a main policy to export only under their own brand names and labels, claimed that one of the main problems and disadvantages in doing that was the inability of their firms in controlling product quality, or giving adequate services or advice to their respective producers in relation to product quality and standards. Branding of products in consumer or retail packages remains largely under the labels and packaging formations of some pertinent foreign buyers. Only in a minority of cases are these products marketed abroad under the exporters' own brand names and labels.⁷ There was a general perception by managers in the relevant Principal EMCs and PIE-5 firms, that the relatively small size⁸ of their companies and the increasing competition in retail distribution at most foreign markets made it, in most cases impossible for them to achieve a necessary market share abroad if exporting under their own labels. Future development of these exports would, therefore, largely and increasingly depend on establishing links with foreign retailers and distributors, which meant in most cases to produce and export under their own brand names and labels. For some obvious reasons, packaging and branding were generally perceived by exporters of fish meal, whole fresh fish on ice, and other marine products which are largely exported in a bulk form like, salted herring and dried fish, as much less of an issue than by exporters of some more highly processed and value-added products. In the exporting of other products, such as various products frozen-at-sea, either in industrial packaging⁹ or packaging accommodated for the catering sector, product branding and labelling have become increasingly important. This is despite the fact that these products seem in some aspects, to adhere to similar methods and determinants in exporting as the commodities listed above i.e. as 'spot-market' commodities. Managers in the Other EMCs and PIE-2 firms who are significant exporters of these products frequently claimed that the

increasing importance of product branding and packaging could be described as a double facet. Firstly, it tended to function as a powerful motivational factor for crew-members of the freezing trawlers, by encouraging them to maintain high quality standards in all their handling of the fish. Secondly, there remained some strong desire among many frozen-at-sea producers to build up their own brand names, mainly in the hope of being able to establish in the mind of foreign buyers some parity between their brand names and product quality.

"We can say that our product exports are of three kinds. Firstly, commodity exports which includes among others the various block products. Secondly, products in relatively simple and large packaging for the catering sector and thirdly, we have products in retail or consumer packaging which now are showing fast growth, even though it's still a relatively small share of our total exports. All products in the first two categories are exported under our own brand names, but products in retail or consumer packs are mainly exported under the labels of foreign retail chains ."

(Managing director. Principal EMC)

"Our product policy is to produce the fish in packaging which is most valuable each time and within the bracket of as much long-term vision as we possibly could. This doesn't mean that we believe it's a final goal for us to put all our products into 75 gr. plastic boxes even though that may be a good objective per se. In the U.S. and the French market the catering market is much more attractive, but in the U.K. most of what we are producing there in our plant is in retail packaging and under the labels of various retailers there."

(Managing director. Principal EMC)

"One reason for suspending our membership in X was our desire to produce and sell our products under our own brand name..... We are convinced, that by producing under our own brand name and in packaging which even have coloured pictures of our trawlers on the lid, our crew members pay much more respect for the raw-material they are handling and for the products they are making. I don't think they would like it to become known that fish which is sold under our own brand name in foreign markets and in packaging which have some coloured pictures of their trawler on the front, would be related to bad quality."

(Managing director, PIE-2 firm and one of the biggest producers and exporters of products frozen-at-sea)

"The main strength of Y is out at the export markets and in our brand name which is well known there."

(Managing director, Principal EMC)

"The main strength of X is included in its relatively big size and the good image which our products have achieved in the U.S. market, through using our brand name Y. Strict quality control and guaranteed product supply have created the firm an extensive trust among its foreign buyers."

(Managing director, Principal EMC)

"In the future I will concentrate on keeping grip of my brand name as I believe that is one of my most valuable assets. I can replace everything, except that."

(Managing director, PIE-4 firm which mainly exports frozen groundfish products to the U.S. market)

"Although, I realize that most of the values could lie in the 'spread of words' of you as a producer and exporter, and of which your brand name could be the most valuable factor, I think I will continue to produce and export under the labels of others. Even some big individual 'own label' producers abroad seem now increasingly under the shoe-heels of the big retailers, so I think my only chance is to export under their labels."

(Managing director, PIE-5 firm)

7.2.4.2. Price

Although the Icelandic exporters of marine products could generally be described as "price-takers,"¹⁰ in the export markets some of the Icelandic exporting firms have established a leading position as influencers on prices of marine products. In the export of primary commodities like whole fresh fish on ice, fish oil and fish meal, the formation of export prices is typically made at the fresh fish auction markets abroad or through what we could call spot-market transactions, where a process of "bids" and "tenders" between foreign buyers and domestic exporters forms the export prices. Export prices for most fresh fillets are similarly mainly decided on the grounds of the

existing spot-market prices at the respective foreign markets. In the exports of other marine products such as those frozen-at-sea, the prevailing spot-market prices seems to be the principal determinants of the export prices. It was frequently admitted by managers that this quite common form of "spot-trading" in exporting of marine products, and the fact that many of the Other-EMCs are keeping relatively loose ties with their domestic processors, had on a number of occasions led to the giving of misleading information to potential foreign buyers, which more often than not has led to price reductions for these products in the foreign markets.¹¹

In the export of salted herring, which remains solely in the hands of Sildarútvegsnefnd, export prices are regularly fixed with foreign buyers at the beginning of every catching season, with prices significantly taking account of cost in production and of foreign competitors. Similarly, in the export of salted roes and stock fish, exporters and domestic producers commonly endeavour to form some kind of agreement, in order to fix a minimum level of export prices at the start of the catching season.

The formation of export prices for various value-added products, such as of canned and other products in consumer packaging, are usually decided differently from most other marine products. Prices for these products are frequently determined between sellers and buyers for a longer period, even up to one year. Another common pricing practice for marine products in retail packaging is to calculate the export prices as a percentage of the final retail prices. Despite, the general emphasis on prices by the exporting firms there are indications that the only firms included in this research, which employ prices meaningfully in their export marketing strategy are the two biggest exporters, S.H. and Í.S., and some very limited number of firms which are exporting products in consumer packaging such as Lýsi hf. To a limited extent, S.Í.F., has also been using prices as a element in their export marketing strategy, especially in their marketing of saltfish in retail packaging, but in its main product

exports and at its biggest markets, the relative size of the company as a leading exporter of saltfish in the World, has been even more important in creating and maintaining higher export prices than some of its competitors.¹² The best example of the use of pricing by S.H. and Í.S. as an element in their marketing strategy is in the U.S. market where both these firms operate "secondary processing" plants and where they both have built up strong brand images, mainly in the catering sector. It is generally accepted that both these firms have been commanding a price premium compared to other importers to the U.S. market,¹³ generated through some early existence and dominance in that market, steady supply of products, and a tight product quality control system.¹⁴ Among other Icelandic exporters of groundfish fillets to the U.S. market it was a common opinion that S.H. and its brand name "Icelandic" were frequently used as a benchmark by these firms when negotiating their export prices with U.S. importers and quoting their prices to the domestic processors. In the other main export markets for frozen groundfish in Europe and Asia, S.H. and Í.S., seem not to be enjoying any similar premium or leading position in their export prices as in the U.S. market, nor are they used as a price reference by the smaller exporters to these markets. A number of the managers in these firms argued that in these markets the smaller exporting firms were even more than level with S.H. and Í.S. in terms of export prices obtained at these markets. Two hypothesized explanations for this, and mentioned by some of my respondents were: first, until the beginning of the 1980s the two above listed companies had put most of their marketing effort in the U.S. market, but paid relatively little attention to other markets such as in Europe, and therefore not established any strong presence in these markets when other exporters entered them; second, the view that there are important differences between the European and the U.S. markets, with the European market much less competitive and easier to enter than the U.S. market, regarding things like product quality requirements and reliability in product delivery. Like other aspects of

their pricing practices, the three "principal export organisations" differ from the other exporting firms in their collection of price information. Only managers in four of the firms studied, S.H., Í.S., S.Í.F. and Lýsi hf., asserted they were systematically collecting information about prices of marine products at their export markets, such as those of their main competitors and the selling prices of their exported products to the final consumers or users.

"The price is shaping in the last half-an-hour before the domestic fish-auction markets opens. The foreign buyers and I, we exchange some information about how the situation is at their end of the market and I give them information about the supply of fish at the auction-markets in Iceland and what the prices are likely to be."

(Managing director. Other EMCs which specialises in the exporting of fresh fillets to the U.S. market)

"These exports are more or less about prices and to being able to sell quickly. I collect information about the prices at my main export markets and try to find out what are the top prices in different markets."

(Managing director. one of the biggest Other-EMCs, which specialises in the exporting of products frozen-at-sea.)

"Prices are the most important thing in the export of this product. Our price formation is importantly based on the minimum contribution, we need to get in production. For decades we have been enjoying between 20-40 per cent higher prices than our main competitors in other countries."

(Managing director. Principal EMC)

"If we are talking about some of the traditional species which the 'sales organisations' are selling, then we tend to be squeezed in prices, as our prices are always compared to the lowest prices obtained by the 'sales organisations'."

(Managing director. Other EMC which is exporting to the U.S. market)

"I keep a close eye on the prices listed by the 'big sales organisations' which are a dominating force here, and I always ensure that I get a copy of their price lists."

(Manager, Other-EMC which is mainly exporting to the U.S. market)

"When I started my exports to the U.S., I compared my ways of marketing, to what 'the sales organisations' were doing there, but they have a premium on everything they are doing at that market, as you probably know. However, what I realized very soon was that importers in the U.S. market were not ready to compare my prices with the prices obtained by Coldwater and Iceland Seafood, but to what they could get cheapest from Canada. This meant obviously, that initially there was a big gap in prices but, gradually the importers started to learn that my products were comparable to what they are buying from Canada. Since then the battle has been to establish a position where you are compared with 'the sales organisations'. In the European market, which I am exporting to as well, 'the sales organisations' are not leading in prices and we tend to compare our prices with competitors from Norway or Denmark."

(Managing director, PIE-4 firm)

"The prices we are getting are mainly the market prices. Certainly, we compare our prices to the prices obtained by the 'sales organisations' and we want to get higher prices than they. What we are most concerned about is how much can we increase our prices, until they stop buying our products. That's our strategy."

(Managing director, PIE-2 firm and one of the biggest exporters of products frozen-at-sea.)

"Export prices are usually decided in advance for a period even up to 12 months and all fluctuations in the raw-material have to be matched by ourselves."

(Managing director, PIE-5 firm)

"In the export of consumer products, i.e. products in consumer packaging, our prices mainly take a reference of the prices of our main competitors. In the U.K. for example, we fully recognise, that we are competing with Seven Seas, which has a dominating position at that market. There we price our products below the prices of their products at least during the time we are getting some position at that market. In other markets where we have a more leading position in market share we also are more leading in prices."

(Managing director, PIE-5 firm.)

7.2.4.3. Markets

One of the general characteristics in the export of most firms in the sector, especially the smaller firms, is how concentrated it is in terms of export markets and foreign buyers. As mentioned earlier, this concentration looks to be significantly decided by the type of marine products exported by the respective exporters, such as in the exporting of various salted products which consumption is restricted to a relatively limited number of countries or areas in the world, based on different consumers' tastes and preferences. In the exporting of some other marine products like the various frozen products, different firm characteristics seem more crucial in deciding the number of markets the firms are exporting to. Information collected in this study indicates, that smaller exporters of frozen products are frequently dependent upon only one or two export markets and also upon only one or two foreign buyers. In contrast the two principal exporters of frozen marine products, S.H. and Í.S., are spreading their exports much more by different export markets and foreign buyers. Data collected in this research showed that of the 30 Other EMCs studied, 22 firms exported more than 70 per cent of their total exports to two markets (countries) or fewer and of the 20 PIE firms researched, (not including PIE-1) 15 firms had some similar concentration in exporting. Consequently, many of the managers in these firms mentioned too much dependence on a few export markets and a small number of customers as one of their main weaknesses in exporting.

This study indicates that there remains generally very little strategic segmentation of export markets by the exporting firms, except in the case of the three 'big sales organisations', S.H., Í.S., S.Í.F., and some of the PIE-5 firms. Among managers of the three above mentioned firms there was usually a very clear division of export markets and market areas, which normally reflected their firm's network of sales subsidiaries abroad. The prime segmentation of the export markets by these managers was usually broadly into "catering" and "retailing", and in their exports of products in "retail or consumer packages", segmentation was claimed to be made on the grounds

of other variables, such as, geographic and demographic. In the case of the PIE-5 firms it was a general feeling among their managers that the absolutely small size of their firms and often rather weak financial position usually meant that these firms were predominantly in the position of being unable to apply any strategic segmentation at the export markets. Finding every possible foreign buyer to whom they could offer acceptable export prices and obtain security in payment was claimed by the PIE-5 managers as the usual alternatives open for their firms, rather than any systematic and strategic segmentation of export markets. Despite becoming increasingly active in the exporting of frozen marine products in recent years, the Other EMCs and the PIE firms seem not to be employing strategic segmentation of export markets to the same extent as S.H. and Í.S. A possible explanation for this difference might be the fact that in a majority of cases the smaller exporters of frozen products sell their products to foreign importing firms, which in turn sell and distribute the products to different levels in the distribution chains at respective markets. In contrast, S.H. and Í.S. approach the export markets through a much more diversified sales network consisting of sales subsidiaries and processing units abroad as well as some direct exports into various segments of final users and consumers at the export markets .

"The main weakness in our exports is how dependent we are on few export markets and foreign buyers."

(Managing director, Other EMC,
and big exporter of products frozen-at-sea.)

"All our exports has been direct to buyers. The main weakness of our system is, I think, that often you don't follow what's going on at some other export markets and you also become too dependent on these individuals or firms."

(Managing director, PIE-4 firm)

"The main markets for salted fish are where there lives people with Catholic beliefs. As we are competing with the 'freezing production' for a limited supply of raw-

material, we attempt to sell to those markets where we could get the highest prices in the long-term. This means we sell relatively little to various islands in the Caribbean and more to some of the richer parts in Portugal rather than to the poorer areas in Spain. The main point is that salted fish is a complicated product which is not convenient in preparation or cooking.....

Segmentation of markets is much more apparent in Spain than in Portugal and our main focus has been on that market during the last few years. Our main objective has been to build up the consumption of our products at the higher priced end of that market by employing a mixed program of T.V. advertisements and promotional things such as; prize winning competitions among school children in Spain and the publication of recipe books. In Portugal, however, we have not been ready to do anything similar to this as that market is much less segmented and, therefore, it is much more difficult to target your advertising and promotional programme."

(Sales manager, S.I.F.)

"In our exports in retail packs we have attempted to find some niche markets which suits our size and capabilities. An example of this is one of our producers who is producing for a supermarket chain in Belgium, which has a strong market position in one ethnic area there. This export is all under our own labels and we have spent substantial amounts in advertising and promoting these products on local T.V. stations and by the publishing of recipe brochures."

(Managing director, Principal EMC)

"It differs quite a lot between markets how much we use market segmentation. In the U.K., cod liver oil is consumed for various reasons but mainly to prevent arthritis. This is therefore our main marketing point there. In the Scandinavian countries, like in Iceland, we put more emphasis on other attributes of the product such as its vitamin and omega content and its potency in preventing cardiovascular diseases."

(Managing director, PIE-5 firm.)

7.2.4.4. Promotion

Personal contacts and visits to foreign customers, appeared in this study, to be the most heavily and widely used promotional methods by the exporting firms. Within the Principal EMCs, day to day relationships and contacts with foreign customers are usually in the hands of people in middle management positions. Regular visits by the

managing directors of these firms to major customers abroad are also an important part in establishing links between foreign buyers and the respective exporting firms. It was a general opinion of managers in the Principal EMCs, that in recent years there had been an increasing interest among their foreign buyers to regularly visit the domestic producers and member firms of the Principal EMCs. Among the other exporting firms, personal contacts and relationships with foreign buyers are chiefly conducted by the respective managing directors of these firms. Typically, these managers claimed, they attempted to visit their foreign counterparts at least once a year, although in some cases daily contact was reported. Apart from the very limited use of advertising by the Principal EMCs, as partly outlined in Section 7.2.4.2., the most commonly used types of media advertising by firms in the sector, have been in the form of small ads or inserts in 'special fishing industry magazines', or 'international trade directories'. The principal aim of these advertisements and inserts is customarily to capture the attention of potential foreign buyers of marine products, or to maintain some awareness of existence among the international traders of marine products. The third main promotional method, and chiefly used by the Principal EMCs, but also by some of the bigger Other EMCs and PIE firms, is the publishing (usually printed in English) of different brochures, containing relevant information about the respective companies, and frequently also general information about the Icelandic fishing industry as a whole. Despite the scepticism expressed by many managers about the effectiveness of participating in various international fisheries or food exhibitions, this form of promotion has been used to a limited extent by the Principal EMCs, as well as by some of the smaller exporters of various canned marine products and products in consumer packaging. Managers in the other exporting firms admitted, however, that one of the reasons why they usually attempted to visit at least one of these exhibitions each year, was their desire to catch up on the most recent technical developments in

the fishing industry. Secondly, there were many who felt that this was a convenient way to meet at one point many of their business counterparts abroad.

"We don't spend much money in advertising our brand name or our products. We believe that the size of this company is not big enough in an international sense, whether in terms of value or volume, to justify the spending of a considerable amount on such things. We make things more going by keeping up good personal contacts and relationship with our foreign buyers. We believe that our money is more wisely spent by inviting some of our buyer's purchasing managers to Iceland, than by spending it on advertising, although we obviously spend some money on that especially when we are appealing to more specialised potential buyers in the catering sector."

(Managing director, Principal EMC)

"I find our gain from participating in the various industry exhibitions abroad has not been very effective when compared to some of our other promotional activities. In my opinion the most effective way to approach foreign markets is by finding some reliable and enthusiastic counterparts abroad."

(Managing director, PIE-5 firm)

"We were offered by the Icelandic Export Council to take part in a 'trade exhibition' in South Korea, which we did. In retrospect, I find this gave us very little return. We spend very small amounts on advertising but 3 years ago we published and distributed a brochure abroad which contained some information about the company. This brochure was sent by mail to all our remaining and former buyers abroad, and was also displayed in most of the Icelandic embassies abroad. I am not exactly sure how effective this was for us but, I believe it considerably improved our image among foreign buyers and also helped us in maintaining our trust among the domestic producers."

(Managing director, Other EMC)

"I usually visit our buyers abroad once a year. I am just recently back now from one such tour, on which I invited one of my domestic producers to go with me ."

(Managing director, Other EMC)

"This company has not taken part in any trade exhibitions, as we feel that's too costly for us. On the other hand, we usually try to visit at least some of these exhibitions in order to meet some of our foreign buyers, but also to establish new contacts. The only other promotional activity by this company has been the insertion of advertisements in a few foreign trade directories."

(Managing director, Other EMC)

7.3. Export Performance and Strength and Weaknesses in Exporting - Managers' view

This section explores how managers of the firms researched, viewed the export performances of their companies, and also considers their evaluation of the main strengths and weaknesses their firms' have in exporting.

7.3.1. Export Performance

Overall, managers of the exporting firms expressed some reasonable satisfaction with their firm's export performance, although there remained some meaningful differences amongst firms in how their performance was evaluated by their managers. Managers of the Principal EMCs stated some apparent different measures of export performance, compared to most interviewees in the Other EMCs, and the PIE firms. PIE-1 firm managers however, did usually not express any special yardsticks on their firm's individual export performance, but used to evaluate it more in relation to the one of their respective Principal EMCs. The three most commonly stated benchmarks of export performance by managers of the Principal EMCs could be summarized as: 1) the firm's export expansion into new markets; 2) the firm's general build-up of their products' quality image in the export markets; 3) the managers' perception of some generally felt satisfaction among their member firms and principal owners in how the Principal EMCs were performing. Other measures of export performance, mentioned were: 1) the firm's ability to accomplish a closer presence in the export markets such as by establishing sales subsidiaries and production plants abroad; 2) the firm's

increased product diversification in exporting.¹⁵ In the Other EMCs, 26 managers of the 30 managers involved expressed satisfaction with their firm's export performance. The most commonly stated yardstick on export performance by these managers, similar to managers of the PIE-2 firms, the PIE-3 firms and the PIE-4 firms, was "company profit", with "export growth" and "the firm's relative share in the total exports of marine products from Iceland" as the second and third most used criteria. Two other measures of export performance, stated by some managers of these firms, but more subjective, were: "receptivity if their business afforded them a job and some acceptable salaries" and a measure stated by managers in three Other EMCs, which subsequently are also among the oldest firms in that category, i.e. "some appreciation of being still in the business". The commonly stated criterion on export performance by managers of the PIE-5 firms were "export sales as a proportion of total sales" and "export growth".

"I find this company has been doing well, and I assess that by increased- exports and profit."

(Managing director, Other EMC)

"I evaluate our performance primarily in terms of profit as there has not been any growth in our exports."

(Managing director, Other EMC which specialises in the exports of fresh fillets)

"Overall, I think we have been doing well and last year this company was among the twenty biggest exporting firms in Iceland and our aim is to be in the group of the ten biggest."

(Managing director, Other EMC which is a big exporter of fish oil and fish meal.)

"The firm has been making profit in most years, but in the end I measure our success in being still alive after twenty years in the business."

(Managing director. Other EMC and one of the oldest of its type in the sector.)

"One of the reasons we decided to leave the 'sales organisations' was our intention to shorten our distribution channels. This has been achieved and led to improved operational profit. To maintain this performance, and even improve it, we must keep the fishermen in touch with the export markets."

(Managing director. PIE-2 firm which is a big exporter of products frozen-at-sea)

"In retrospect I find the company has been doing well. I measure this by some marginally increased exports and some decent profit margin."

(Managing director. PIE-4 firm which specialises in the exports of fresh fillets.)

"I have sometimes told the branch manager in my bank, that I have now been doing things like this for nearly 4 years and we are still in the business. During the same time, several dozen firms have ceased operation or gone bankrupt. I think this might be a good indicator of our performance in exporting."

(Managing director, PIE-4 firm which exports frozen ground-fish products and which previously was a member of one or more Principal EMCs)

"I think in our exporting business, we have been doing quite well. I measure that mainly in increased sales of products in consumer packaging and by the fact that exports of these products is now a much higher proportion of our total sales than it was some years ago."

(Managing director, PIE-5 firm)

"I think I can be reasonably pleased with our performance. Our exports have grown steadily and our profit has also improved by the years."

(Managing director. small PIE-5 firm)

7.3.2. Strengths and Weaknesses in Exporting

7.3.2.1. Strengths in Exporting - Managers' view

Good product quality, was commonly viewed by managers as one of their firms' main strengths in exporting. (Except those exporting whole fish on ice.) However, many of these managers believed 'good product quality image' was particularly associated with the various frozen groundfish products exported. Apparently, many managers in the Other EMCs and the PIE firms, acknowledge the leading role of S.H. and Í.S., in creating this favourable image among foreign buyers, especially in the U.S. market. Managers of the Principal EMCs generally perceived product quality as one of their firm's main strengths in exporting along with three other factors equally mentioned as: 1) a partially or fully centralised system in production and quality control; 2) relatively formal ties with producers; 3) good marketing and distribution system abroad. This view and these factors were largely shared by my respondents in the PIE-1 firms who, despite expressing various criticisms about the Principal EMCs and their form of operation, generally perceived their shareholding or membership in these firms as a major strength for their companies. In my interviews with the managers of S.Í.F. and Síldarútvegsnefnd, they both reckoned the strength which their firms had possessed during the years, from being the exclusive exporters of salted groundfish and salted herring from Iceland. Apart from 'product quality', managers in the Other EMCs usually mentioned two other factors as their firm's main strengths in their exporting. These are: "established personal trust with foreign buyers and domestic producers" and "their firm's ability to respond quickly to changes in the fishing industry and at the export markets". Among managers of the PIE-4 firms and the PIE-2 and PIE-5 firms, there was a general feeling that one of the main strengths of these firms in exporting was "to be exporting their own products" i.e. products which were their own produce. This view was usually backed by the opinion that this kept the respective firms in a

much closer touch with the needs and demands of their foreign buyers which enabled them to perform better in their exporting.

"Even though I decided to leave X and start exporting directly, I can readily admit that the 'sales organisations' are in many respects very good. They have in most cases, for example, made a leading job at the main export markets and I don't hesitate to say that the very good image, which many of our marine products, especially the frozen ones, have accomplished abroad is largely based on their efforts at these markets."

(Managing director, PIE-4 firm which mainly exports frozen groundfish products to the U.S. market.)

"I believe that the main strengths of this firm are embodied in its somewhat centralized production and quality control system. Our strongest marketing point in the competition in the foreign markets is consistency in product quality and reliability in delivery."

(Managing director, Principal EMC)

"The main strength of X is founded in its relatively big size and the good image which our products have achieved at the U.S. market, through using our brand name Y. Strict quality control and guaranteed product supply have created for the firm an extensive trust among its foreign buyers."

(Managing director, Principal EMC)

"The access which we get to the markets and the knowledge which persists within the 'sales organisations' is absolutely one of the strengths of this company. We also believe we are benefiting immensely from being within an environment which has a certain "image" and firm product quality standards."

(Managing director, PIE-1 firm)

"I think our main strength lies in the trust which we have established among the domestic producers and among our foreign customers. Our policy has always been to stick to our words."

(Manager, Other EMCs which mainly is exporting frozen products)

"Flexibility, and ability to respond quickly to all changes which are taking place at the export markets, such as changes in prices, is undoubtedly one of our great strengths."

(Managing director. Other EMC, which is mainly exporting products frozen-at-sea.)

"I think absolutely, that one of our strengths in this company is to be producing and exporting our own products. This enables us to be in much closer contact with our foreign buyers, which means that we get a much better feeling for their needs and demands and they get a much better understanding of our capabilities and problems, such as when there is a shortage in raw-material supply."

(Managing director. PIE-5 firm which previously sold its products through one of the main 'sales organisation'.)

7.3.2.2. Weaknesses in Exporting - Managers' view

Like many other interviewees, the managers in the Principal EMCs generally showed some reluctance in stating the factors which they perceived as the main weakness of their firms in exporting. With reference to the analysis in section 6.1.3., all the respondents in the Principal EMCs acknowledge some recognition of the alleged deficiency in their firm's "system of communication" with producers, although they hardly identified it as a factor of weaknesses in exporting. It was, however, commonly agreed by managers in both the Principal EMCs and the PIE-1 firms, that significant changes and improvements had occurred in the form of relationships between these parties in the last few years. Among managers of the PIE-1, PIE-4, and PIE-5 firms, "inadequate or relatively weak financial position" was frequently stated as a weakness in exporting, although some managers perceived the above factor more as a weakness in their firm's overall operation rather than specifically hampering their exporting activity. Subsequently however, it was claimed that the financial hardship, experienced by many of the PIE-1 firms, and other firms in the processing sector, in recent years, had made these firms increasingly price orientated and adamant on getting quick payments for their produce and export. "Informal ties with producers", as outlined in Section 6.2.9., was perceived by many Other EMC managers as

somewhat a problematic factor in exporting, and was similarly seen by many of them as one of their firm's main weakness in exporting. "Too much, reliance on few export markets" and "hefty dependence on a small number of foreign buyers" were two additional factors also mentioned by some Other EMCs managers as a weakness of their firms in exporting. This view was also shared by some managers in the PIE firms and by the managers of S.Í.F. and Síldarútvegsnefnd. This refers back to our analysis in Section 5.1.3. and Section 7.2.4.3. which indicated how narrowly based the exports of many of these firms are, i.e. limited to a relatively very few type of products and to few export markets.

"We find that our producers are sometimes not willing enough, to commit adequate resources to product research and marketing. This is unfortunate, and probably we could define this as a weakness in our exporting activity and even in our relationship with producers."

(Managing director, Principal EMC)

"We have always attempted to keep up as much self-criticism as possible. We organize meetings with the producers where we try to answer all those questions which arise in our relation with the producers. One of the weaknesses of this system of "collective exporting" is the danger that the "shoddy guys" try to benefit from being under the shelter of the 'sales organisations'."

(Managing director, Principal EMC)

"We are fully aware that it's a weakness per se that we are between the producer and the foreign buyer, as it lengthens the communication line. What we are increasingly doing however, is to establish more direct contacts between the foreign buyers and the domestic producers through mutual visits etc."

(Managing director, Principal EMC)

"Since I entered this business there have occurred some tremendous changes and improvements in the relationship and transferring of information between the staff of X and the owners of X."

(Managing director, PIE-1 firm)

"Our main weakness is that there persists no long-term objectives by the producers. They are totally price oriented so if we can not always offer them the highest prices, we are out."

(Managing director, Other EMC which specialises in the exporting of fish oil and fish meal.)

"Our main weakness is, that we don't have these strong ties with producers as "the big sales organisations" have. This definitely gives them some advantage over us, as they know how much they have on their hands, but our exports are more surrounded by uncertainty."

(Managing director, one of the biggest Other EMCs)

"It's a weakness how dependant we are on the exporting of fish meal and fish oil, especially when you consider how volatile the capelin catch is. Last year for example, the capelin catch totally collapsed and left us with more than less, no income."

(Managing director, Other EMC which mainly exports fish meal and fish oil)

"Too much dependence on only one product, which also is mainly sold to only one market, makes us sometimes a little bit vulnerable for fluctuations in catches and export prices."

(Managing director, Other EMC which mainly is exporting products frozen-at-sea.)

"The main weakness of this company as of every other company in the fishing industry in Iceland is it's financially weak. It's a sad fact that despite getting around 80 per cent of our exports revenue from exporting of marine products you can only find c.a. 4-5 firms in this sector which are financially in a good shape."

(Managing director, PIE-1 firm)

"Our weakness is some lack of capital. We need fresh capital into the firm to do some of the things which we feel could create more revenue for us."

(Managing director, PIE-5 firm)

Conclusions

This chapter has shown that there remains some significant differences between the firms in the export sector in their export management and pursuit of export marketing strategies. These identified differences in the firms' export behaviour seems significantly related to the two main firm characteristics used to categorise firms in this research, i.e. the firm's principal activity and products exported. Generally, the firms' in the sector have not set themselves any clearly stated export objectives. Despite some differences between firms, this study has indicated that one of the characteristics of the export sector is the price orientation of firms in the sector, i.e. to seek highest possible prices in their export each time. This emphasis on export prices seems largely to be the result of three principal factors: first, the nature of the commodity exported as produce of natural resources, and which to a large extent is exported unprocessed or only primary processed; second, the weak financial position of many firms in the fishery and processing sectors; third, the share based salary system in the fisheries sector which seems to have important effects through the two other sectors of the industry. However, the research analysis has indicated, that as products become more highly processed, less emphasis seems to be put by firms on export prices and getting quick payments, but more on other factors such as the build-up of long-term relationship with foreign buyers.

Export planning activity by firms in the sector is apparently affected by one of the sectors' main peculiarities, i.e. the uncertainty which exists in both produce supply and in product demand. Significant differences remain between firms in this area with the Principal EMCs usually undertaking quite an extensive and centralised export planning in association with the PIE-1 firms, but most of the Other EMCs and PIE firms usually making very little or no export planning.

The Principal EMCs have in their exporting pursued an export policy or strategy which has principally emphasised product quality, reliability in product delivery, long-

term relationship with foreign buyers, and increasingly in recent years, getting closer to the final consumer in their exporting. Differences in export emphasis among the Other EMCs and PIE firms appears to be more determined, by these firms main type of products exported, than by various firm characteristics such as their size, age or principal activity. This chapter has shown, that in some areas of export management and marketing, the Principal EMCs, especially S.H. and Í.S., have established a clear advantage over other firms in the sector. This is particularly in areas such as, product development, product quality control, product availability or supply, the establishing of product brand names, export prices in some export markets, a bigger and more controllable marketing and distribution system and more diversification in exporting by export markets. Consequently, many of the Other EMCs and PIE firms in the sector, use the Principal EMCs as a reference point in their exporting activity, such as in export pricing and product quality standards. As many of the above listed factors also seem to sum up the main strengths of the Principal EMCs in exporting the main strengths of the smaller firms, i.e. the Other EMCs and the PIE firms, appears to lie in their flexibility and quickness to respond to changes in the fishing industry and at the export markets. The main weakness of many of the Other EMCs, appears to be the informal ties they have with producers and the factor they share with many of the PIE firms i.e. the concentration or invariety there exist in their exporting by markets. Relatively weak financial position is the factor most frequently claimed by PIE firm managers as their firm's main weakness in the export activity.

References Cited

- ¹ Pearce, David W. The Dictionary of Modern Economics. MacMillan Press, London 1983 defines it as: "A market in which a commodity or currency is traded for immediated delivery. Prices at spot markets are known as 'spot prices' "
- ² For every crew member, salaries are fundamentally based on shares in the value of the catch with a certain minimum guaranteed pay if catches are unusually low. These shares differ according to fishery and vessel type.
- ³ In the case of Síldarútvegsnefnd (Icelandic Herring Board) all the production and exports of salted herring are based on advanced sale contracts and the available catching quotas for herring in Icelandic waters each year. Compared to the other Principal EMCs, Síldarútvegsnefnd keeps in its hands the production management and planning of all its exports.

" Our production accounting system is very extensive and the quality control and management as well. Every morning, when the producers are expecting some raw-material they inform us about the average size of the herring catch they are expecting and of its fat content. Having received this information, we decide what type of herring products they should produce. At the end of each production day we receive information from the producers about their production that current day which we then monitor and compare to our sales contracts. "
Einar Benediktsson, managing director, Síldarútvegsnefnd
- ⁴ Revealed in my interviews with exporters of fish oil and fish meal .
- ⁵ By "standard" frozen groundfish products we mean various packaging of frozen fillets and frozen block.
- ⁶ Based on information obtained in a survey made by the Icelandic Science Committee, four of the firms included in this research spent more than 5 million ISK in 1990 on research and development which meant also that these firms remained among the 20 firms in Iceland which spent the largest sum of money on R&D. Vísindaráð og Rannsóknarráð ríkisins. Fréttabréf. Vor 1992.
- ⁷ Most of the products in consumer- and retail packaging are exported by the Principal EMCs and the PIE-5 firms.
- ⁸ This was usually measured both in terms of volume and value. My respondents in these firms usually mentioned high advertising and promotional cost as a major barrier to marketing their products abroad under their own brand names.
- ⁹ By industrial packaging we usually mean packages which are of bigger size than those designed for the catering and retail sector. Commonly these packages are carton boxes of the size 10-30 kg.
- ¹⁰ Pearce, David W. The Dictionary of Modern Economics. MacMillan Press, London 1983 defines it as: "An economic agent whose size is sufficiently insignificant in relation to the size of the market in which it operates, such that its activities can bring no influence to bear on the prevailing market price."
- ¹¹ These concerns were particularly raised by managers in firms exporting fish oil and fish meal and those exporting whole-frozen: Greenland halibut and redfish to the markets in East Asia. These managers claimed that in a number of occasions it happens that exporters (usually Other EMCs) in Iceland were in fact quoting the same fish or produce to potential foreign buyers. This usually, happens as a result of the loose ties these exporters generally have with producers and the competition there remains between exporters for these producers.

¹² Sigurður Haraldsson, Managing Director S.Í.F. and Ásbjörn Björnsson, Sales Director, S.Í.F. Interview 29.06.1992

¹³ Geirsson, Magni Thor. "Frossen torsfillet på USA-markedet - Strukturanalyse som strategigrunnlag - med utgangspunkt i bedriftene Coldwater Seafood Corporation & Iceland Seafood Corporation" Fiskerikandidatsoppgave Norges Fiskerihøgskole, Universitet i Tromsø, Varen 1989.

¹⁴ Friðrik Pálsson, Managing director, S.H. Interview 15.06.1992. and Benedikt Sveinsson, Managing director, Í.S. Interview 02.06.1992.

¹⁵ S.H. and Í.S. are the only marine product exporters which have been awarded the 'President of Iceland's Award for Export Achievement'. S.H. received the award in 1989 and Í.S. in 1993.

8. Export Behaviour

Introduction

This chapter outlines the main results from a questionnaire survey which was carried out with the aim to follow-up some of the qualitative findings, generated in the interviews conducted earlier with managers in the export sector. It is an opportunity to emphasise here, what was previously outlined in Chapter 1 and Chapter 5, that the firms included in this study are estimated to have handled around 92 per cent of the total export value of marine products from Iceland in 1991, and that the response rate to the questionnaires was around 95 per cent.

Quantitative measures of some of the variables identified in the interviews are aimed at achieving some generality, providing measures that are amenable to statistical manipulation, and facilitating the undertaking of comparative research in other countries or social settings. The small number of firms in this survey, however, inhibits the drawing of many significant statistical conclusions, but provides indications of the importance of different factors included in the questions and for different firms in the export sector.

This chapter is divided into 2 main sections. The first section sets out in four sub-sections the results from each of the four questions in the questionnaire and the second section provides conclusions. The research methodology used in the survey, the questionnaire design, the survey process and the methods of analysis are outlined in the first chapter of this thesis.

8.1. Results

This section is divided into four sub-sections. It sets out the main result for each of the four questions included in the questionnaires. The first section outlines the main factors perceived as problems associated with exporting. The second section discusses the perceived objectives in exporting and the third and fourth sections the managers perception of their firms' main factors of strengths and weaknesses in exporting.

8.1.1. Problems Associated with Exporting

As indicated in Table 8.1. there were 56 responses to the 30 elements included in the first question. Table 8.1. shows the frequency of responses to each of the elements of the five-point scale as well as the mean and median values of these responses and the standard deviation, recalling that the responses were measured on a scale from 1 to 5 with the notion "extremely problematic" taking the higher value.

As shown in Table 8.1. several factors were perceived by managers as a problem in exporting, although none of the factors was indicated as an obstacle of major importance for the export sector in general. Table 8.1. shows that a total of 9 factors have a mean response of 3 or greater and 12 factors a median response of 3 or greater.

In Table 8.2., cross-tabulation of responses is made to the two previously defined categories of firms, by showing their mean response, median response, and standard deviation. Categorisation of firms is, as outlined above, in accordance with our previous definitions i.e. firstly, on the grounds of their principal activity, and secondly, on the grounds of their specialised product export.¹ The number of firms included in each of the defined categories is indicated in Table 8.2., below each category headings. As shown in the table all the 56 firms responding are included in the "principal activity" categorisation but the total number of specialised exporters

included in the analysis remained at 40 firms. However, the only specialised exporter of dry fish products was excluded from the table which left the total number of firms in Table 8.2, grouped by their specialised export at 39 firms.

In the following text a description is supplied to the analysis of the 30 factors included in the first question, and outlined in Table 8.1. and Table 8.2.

Paperwork. This is not perceived by managers as a problematic factor in exporting. As shown in Table 8.1., more than 73 per cent of 56 respondents indicated paperwork as either not at all problematic, or not very problematic, and only 3.6 per cent of managers perceive it as a very problematic factor.

Seasonal fluctuations in the fish supply. More than 23 per cent of managers perceived seasonal fluctuations in the fish supply as a very or extremely problematic factor in exporting. As indicated in Table 8.2., this factor appears to be particularly problematic for exporters of fresh fish on ice by air, exporters of oil & meal, and exporters of salted products.

High real exchange rate of the Icelandic króna. This factor is generally perceived by exporters as being somewhat of a problem in exporting, and more than 30 per cent of the respondents perceived it as either very problematic or extremely problematic. As shown in Table 8.2., this factor was especially emphasised by managers in the Principal EMCs and managers in PIE-4 firms, but in both these group of firms the mean value for this factor was around 4.0.

Unstable business environment in Iceland. As shown in Table 8.2. all the main groups of exporters, except exporters of fish oil and fish meal (PIE-3, Oil & Meal), perceived this factor as an important obstacle in exporting. The significance of this factor is indicated by the fact, that nearly 54 per cent of the 56 managers responding, perceived this factor as either a very problematic or extremely problematic barrier to export. (Table 8.1.).

Informal ties with producers. As indicated in Table 8.1. this factor is generally not seen as a problematic factor in exporting among exporters. However, of the different firm categories managers in the Other EMCs, especially oil and meal exporters, assigned this factor an apparently higher score than managers in other groups of firms.

Import tariffs in foreign markets. Around 2/3 of the responding managers ranked the importance of this factor as being in the range of somewhat problematic to extremely problematic. As shown in Table 8.2. this problem is particularly critical for specialised exporters of fresh fish on ice by air and for exporters of salted products.

High transportation cost to export markets. This is a factor generally perceived by exporters as an obstacle in exporting. As shown in Table 8.2. this factor is strongly posed as being problematic, by exporters of oil & meal, and exporters of fresh fish on ice by air. Among PIE-4 and PIE-5 firms this factor is also ranked as a barrier to export, with a mean value of 3.5.

Export monopoly licences in Iceland. This factor is not indicated by exporters as being a barrier to export, either among firms in general or among firms in any of the defined firm categories.

Subsidies granted to foreign competitors. Around 45 per cent of the 56 responding exporters, valued this factor as being either a very problematic or extremely problematic obstacle to exporting. As shown in Table 8.2. this factor is particularly important among exporters of frozen and salted products.

The export of whole fresh fish on ice (unprocessed). Not surprisingly, this factor was perceived as an extremely important problem in exporting among exporters of fresh fish on ice by air. Similarly it was indicated as an important problem in exporting by managers in the PIE-4 firms, who assigned it a mean and a median value of 4.0. Among managers in the Principal EMCs and firms specialising in the exporting of salted products, the factor was assigned a median value of 3.0.

Shortage of fish due to catch restrictions. As shown by a median value of 3.0 this factor is generally perceived by managers as being somewhat of a problem in exporting. However, as Table 8.2. indicates, managers in firms exporting various canned products and products in consumer packs (PIE-5, Canned) did not perceive this factor as problematic.

Restrictions in the exporting of whole fresh fish. Only specialised exporters of whole fresh fish on ice indicated this factor as an important problem in exporting, with mean and median values of 3.667 and 3.5 respectively. (Table 8.2.) Among other exporters this factor was not indicated as problematic, and the mean and median values assigned by the 56 managers were 1.643 and 1.0 respectively.

Geographical distance from export markets. This is a factor generally indicated by exporters, as somewhat of a barrier in exporting, and as shown in Table 8.2., particularly emphasised by exporters of fish oil and fish meal (PIE-3, Oil & Meal), and exporters of products in consumer packs (PIE-5, Canned).

Small home market. As shown in Table 8.2., only exporters of products in consumer packs, (PIE-5, Canned), perceived this factor as a important barrier to exporting, assigning it a median value of 4.0.

Small size of the company. This factor was generally not indicated as an obstacle in exporting or by any of the different firm categories, as indicated by a mean value of 1.893 (Table 8.1.).

Fluctuations in demand at the export markets. Generally, managers in the exporting firms perceived this factor as somewhat of a problem in their exporting, as indicated by a mean and median values of 3.161 and 3.0 respectively (Table 8.1.). As shown in Table 8.2 this problem appears to be especially important for exporters of fish oil and fish meal and exporters of salted products (PIE-3, Salted, Oil & Meal).

Foreign exchange restrictions at export markets. This factor is generally not perceived by managers as an obstacle in exporting. Despite not being portrayed in

Table 8.2., "foreign exchange restrictions at export markets" was indicated by the only specialised exporter of dry fish products as an important problem in exporting.

Language and cultural differences. The mean and median values of 1.643 and 2.0 respectively indicates the low importance of this factor as a barrier to export. As shown in Table 8.2. this attitude is largely shared by managers within all the firm categories.

Finding reliable buyers abroad. Like the two previous factors, this factor is not perceived as a barrier to exporting by managers, and no important differences appear to remain between the different types of firm portrayed in Table 8.2..

Foreign currencies fluctuations. Around 60 per cent of managers indicated this factor as being "somewhat problematic" in exporting. However, no apparent differences remain between the defined groups of exporting firms in relation to the importance of this factor.

Obtaining information about financial position of foreign buyers. This was a factor generally indicated by managers, as being of little problem in exporting, as was indicated by mean and median values of 2.268 and 2.0 respectively.

Export services provided by the Icelandic banks. This factor is generally not perceived by managers as a problem associated with exporting, and no apparent differences seem to remain between the different categories of exporters.

Technical requirements at export markets. This factor was not indicated by managers as an important obstacle in exporting, and nearly 70 per cent of the 56 respondents, valued this factor as not at all problematic or not very problematic.

Financing export sale. Only managers in the 6 PIE-4 firms, included in the study, assigned this factor as being an obstacle in exporting, as is indicated by their mean and a median values of 3.0 (Table 8.2).

Geographical location of the company in Iceland. Generally, this factor was not perceived as a barrier to export by managers, and no apparent differences appear to

remain between the different categories of firms'. However, the highest mean value of just over 1.8 was indicated by exporters of whole fresh fish on ice (Iced) (Table 8.2.).

Meeting product quality requirements. This factor is not perceived by managers as a problem related to exporting of marine products, either in general or within any of the defined firm categories.

Price fluctuations at the export markets. Generally, this factor is perceived by managers as being somewhat of a barrier to export. However, the importance of this problem is particularly apparent among exporters of whole fresh fish on ice and those of fish oil and fish meal, (PIE-3, Iced, Oil & Meal).

High production cost in Iceland. This is a factor which clearly was indicated by exporters as an export obstacle, and more than 80 per cent of the responding managers ranked this factor in the range from being "somewhat problematic" to "extremely problematic".

Labour union policy. In general, this factor was not perceived as being an important barrier to export. However, among managers in the PIE-1, PIE-2 and PIE-4 firms, this factor was indicated as being of some problem in their exporting activity, showing a mean value of more than 3.0 for each of the defined firm categories.

Obtaining market information. Overall this factor was not perceived by managers as an important problem associated with exporting.

Table 8.1

Percentage Responses to the Question Concerning the Importance of Obstacles or Problems Related to Exporting of Marine Products.

Obstacles or problems associated with exporting of marine products.	Number Responding	Not at All Problematic	Not Very Problematic	Somewhat Problematic	Very Problematic	Extremely Problematic	Mean Response	Median Response	Standard Deviation
1 Paperwork.	56	37.5%	35.7%	23.2%	3.6%	0.0%	1.929	2.000	0.871
2 Seasonal fluctuations in the fish supply.	56	1.8%	23.2%	51.8%	17.9%	5.3%	3.018	3.000	0.842
3 High real exchange rate of the Icelandic króna.	56	3.6%	33.9%	32.1%	17.9%	12.5%	3.018	3.000	1.087
4 Unstable business environment in Iceland.	56	0.0%	14.3%	32.1%	41.1%	12.5%	3.518	4.000	0.894
5 Informal ties with producers (processors).	56	35.7%	30.4%	19.6%	12.5%	1.8%	2.143	2.000	1.103
6 Import tariffs at foreign markets.	56	17.9%	16.1%	39.3%	14.3%	12.4%	2.875	3.000	1.237
7 High transportation cost to export markets.	56	1.8%	19.6%	44.6%	17.9%	16.1%	3.268	3.000	1.018
8 Export monopoly licences in Iceland.	56	46.4%	25.0%	16.1%	5.4%	7.1%	2.018	2.000	1.228
9 Subsidies granted to foreign competitors.	56	7.1%	14.3%	33.9%	32.2%	12.5%	3.286	3.000	1.091
10 The export of whole fresh fish on ice (unprocessed)	56	42.9%	17.9%	21.4%	8.9%	8.9%	2.232	2.000	1.335
11 Shortage of fish due to catch restrictions.	56	17.9%	19.6%	42.8%	16.1%	3.6%	2.679	3.000	1.064
12 Restrictions in the exporting of whole fresh fish.	56	66.1%	14.3%	10.7%	7.1%	1.8%	1.643	1.000	1.052
13 Geographical distance from export markets.	56	8.9%	14.3%	57.1%	14.3%	5.4%	2.929	3.000	0.931
14 Small home-market.	56	26.8%	33.9%	23.3%	12.5%	3.6%	2.321	2.000	1.114
15 Small size of the company.	56	32.2%	46.4%	21.4%	0.0%	0.0%	1.893	2.000	0.731
16 Fluctuations in demand at the export markets.	56	1.8%	17.9%	57.2%	19.6%	7.1%	3.161	3.000	0.826
17 Foreign exchange restrictions at export markets.	56	69.6%	14.3%	10.7%	1.8%	0.0%	1.446	1.000	0.761
18 Language and cultural differences.	56	48.2%	39.3%	12.5%	0.0%	0.0%	1.643	2.000	0.699
19 Finding reliable buyers abroad.	56	21.4%	39.3%	30.4%	8.9%	0.0%	2.268	2.000	0.904
20 Foreign currencies fluctuations.	56	5.4%	14.3%	58.9%	14.3%	7.1%	3.036	3.000	0.894
21 Obtaining information about financial position of buyers.	56	17.9%	44.6%	30.4%	7.1%	0.0%	2.268	2.000	0.842
22 Export services provided by the Icelandic banks.	56	33.9%	32.2%	21.4%	7.1%	5.4%	2.179	2.000	1.146
23 Technical requirements at export markets.	56	19.6%	48.2%	26.8%	3.6%	1.8%	2.196	2.000	0.862
24 Financing export sales.	56	26.8%	35.7%	23.2%	10.7%	3.6%	2.286	2.000	1.091
25 Geographical location of the company in Iceland.	56	73.2%	17.9%	7.1%	1.8%	0.0%	1.375	1.000	0.702
26 Meeting product quality requirements.	56	50.0%	37.5%	12.5%	0.0%	0.0%	1.625	1.500	0.702
27 Price fluctuations at the export markets.	56	1.8%	23.2%	50.0%	19.6%	5.4%	3.036	3.000	0.852
28 High production cost in Iceland.	56	5.4%	14.3%	41.1%	32.1%	7.1%	3.214	3.000	0.967
29 Labour union policy in Iceland.	56	16.1%	41.0%	23.2%	14.3%	5.4%	2.518	2.000	1.095
30 Obtaining market information.	56	12.5%	57.1%	30.4%	0.0%	0.0%	2.179	2.000	0.636

Note: 1 = not at all problematic, 2 = not very problematic, 3 = somewhat problematic, 4 = very problematic, 5 = extremely problematic.

Table 8.2.

Cross-tabulation of Responses to the Question Concerning the Importance of Obstacles or Problems Related to Exporting of Marine Products.

Obstacles or problems associated with exporting of marine products.	Principal EMC		Other EMC		PIE-1	PIE-2	PIE-3	PIE-4	PIE-5	ICED	ICED BY AIR	FROZEN	SALTED	OIL & MEAL	CANNED
	N=4	N=28	N=6	N=5	N=3	N=6	N=3	N=6	N=4	N=6	N=4	N=17	N=3	N=7	N=2
1 Paperwork.	Mean	1.0000	2.1429	1.6667	2.0000	1.0000	1.0000	2.5000	1.5000	2.1667	2.0000	1.8824	1.3333	1.5714	2.0000
	Median	1.0000	2.0000	1.5000	2.0000	1.0000	1.0000	2.5000	1.0000	2.0000	2.0000	2.0000	1.0000	1.0000	2.0000
	S.D.	0.0000	0.8034	0.8165	0.7071	0.0000	1.0488	1.0000	1.0488	1.0000	0.7528	0.8165	0.9275	0.5774	0.9759
2 Seasonal fluctuations in the fish supply.	Mean	3.2500	3.0000	2.5000	2.6000	3.6667	3.6667	3.6667	2.7500	2.6667	3.5000	2.7059	4.3333	3.4286	2.5000
	Median	3.0000	3.0000	2.5000	3.0000	4.0000	3.5000	3.0000	3.0000	3.0000	3.5000	3.0000	5.0000	3.0000	2.5000
	S.D.	1.2583	0.7698	1.0488	0.5477	0.5774	0.8165	0.5000	0.5000	0.5164	1.2910	0.5879	1.1547	0.5345	0.7071
3 High real exchange rate of the Icelandic króna.	Mean	4.2500	2.7500	2.5000	3.2000	2.3333	4.3333	2.7500	2.5000	2.6667	3.2500	3.0000	3.6667	2.7143	3.0000
	Median	4.0000	3.0000	3.0000	4.0000	2.0000	4.5000	2.5000	2.5000	2.0000	3.0000	3.0000	4.0000	2.0000	3.0000
	S.D.	0.5000	1.0046	0.8367	1.0954	0.5774	0.8165	0.9574	0.9574	1.0328	1.2583	1.0000	0.5774	1.1127	1.4142
4 Unstable business environment in Iceland.	Mean	3.7500	3.6786	3.6667	3.6000	2.0000	2.0000	3.6667	2.7500	3.3333	3.2500	3.9412	3.0000	2.8571	3.5556
	Median	4.0000	4.0000	4.0000	3.0000	2.0000	4.0000	4.0000	3.0000	3.5000	3.0000	4.0000	3.0000	3.0000	4.0000
	S.D.	0.5000	0.9049	1.0328	0.8944	0.0000	0.5164	0.5000	0.5164	0.5000	0.8165	0.5000	0.8993	1.0000	0.8997
5 Informal ties with producers (processors).	Mean	1.5000	2.5714	2.1667	2.2000	2.0000	1.8333	1.5000	1.5000	1.5000	1.2500	2.2941	1.3333	2.5714	2.1481
	Median	1.5000	2.5000	2.0000	2.0000	2.0000	1.5000	1.0000	1.0000	1.5000	1.0000	2.0000	1.0000	3.0000	2.0000
	S.D.	0.5774	1.1684	0.7528	0.4472	1.0000	1.1690	1.0000	1.0000	0.5477	0.5000	1.1048	0.5774	1.2724	1.1059
6 Import tariffs at foreign markets.	Mean	3.2500	3.0357	3.1667	2.6000	1.3300	3.0000	2.2500	2.2500	2.8333	4.2500	2.5294	5.0000	1.8571	2.0000
	Median	3.5000	3.0000	3.0000	2.0000	1.0000	3.0000	2.5000	2.5000	3.0000	4.5000	3.0000	5.0000	2.0000	2.0000
	S.D.	2.0616	1.1701	0.4082	1.5166	0.5774	1.4142	0.9574	1.3292	1.3292	0.9574	1.1789	0.0000	1.0690	1.4142
7 High transportation cost to export markets.	Mean	2.5000	3.2500	3.3333	2.4000	5.0000	3.5000	3.5000	3.5000	2.8333	4.5000	2.6471	3.0000	4.4286	3.0000
	Median	2.5000	3.0000	3.5000	2.5000	5.0000	3.5000	3.5000	3.0000	3.0000	4.5000	3.0000	3.0000	5.0000	3.0000
	S.D.	0.5774	1.0046	0.8165	0.5477	0.0000	1.0488	1.0000	1.0488	1.0000	0.7528	0.8618	0.0000	0.9759	0.0000
8 Export monopoly licences in Iceland.	Mean	1.0000	2.3571	1.6667	1.6000	1.0000	2.6667	1.5000	1.5000	2.3333	2.2500	2.0000	1.0000	2.1429	1.5000
	Median	1.0000	2.0000	1.5000	1.0000	1.0000	2.5000	1.5000	1.5000	2.5000	2.0000	2.0000	1.0000	1.0000	1.5000
	S.D.	0.0000	1.3113	0.6667	0.8944	0.0000	1.6330	0.5774	0.5774	0.8165	0.5000	1.4577	0.0000	1.5736	0.7071
9 Subsidies granted to foreign competitors.	Mean	3.7500	3.5000	3.8333	3.8000	2.3333	3.1667	1.7500	1.7500	3.0000	3.5000	3.5882	4.0000	3.0000	2.0000
	Median	3.5000	4.0000	4.0000	3.0000	3.0000	3.0000	2.0000	2.0000	3.5000	3.0000	4.0000	4.0000	3.0000	2.0000
	S.D.	0.9574	1.0715	0.7528	1.2247	1.1547	0.7528	0.5000	0.5000	1.2649	1.0000	1.0641	1.0000	1.5275	0.0000
10 The export of whole fresh fish on ice (unprocessed)	Mean	2.5000	2.3929	1.8333	1.2000	1.0000	4.0000	1.0000	1.0000	1.1667	4.5000	2.3529	3.0000	1.0000	2.2778
	Median	3.0000	2.0000	2.0000	1.0000	1.0000	4.0000	1.0000	1.0000	1.0000	5.0000	2.0000	3.0000	1.0000	2.0000
	S.D.	1.0000	1.3700	0.7528	0.4472	0.0000	0.8944	0.0000	0.0000	0.4082	1.0000	1.3201	2.0000	0.0000	1.3377

N= number of firms.

Table 8.2. continued
Crosstabulation of Responses to the Question Concerning the Importance of Obstacles
or Problems Related to Exporting of Marine Products.

Obstacles or problems associated with exporting of marine products.	Principal EMC N=4	Other EMC N=28	PIE-1 N=6	PIE-2 N=5	PIE-3 N=3	PIE-4 N=6	PIE-5 N=4	ICED N=6	BY AIR N=4	FROZEN N=17	SALTED N=3	OIL & MEAL N=7	CANNED N=2	
														Mean
11 Shortage of fish due to catch restrictions.	2.7500	2.8571	2.8333	2.0000	2.3333	2.8333	2.0000	2.3333	3.2500	2.8235	3.0000	2.2857	1.5000	
	3.0000	3.0000	3.0000	2.0000	3.0000	3.0000	1.5000	3.0000	3.0000	3.0000	3.0000	2.0000	1.5000	
	1.2583	1.1127	0.9832	1.0000	1.1547	0.4082	1.4142	1.0328	0.5000	1.0744	2.0000	1.1127	0.7071	
12 Restrictions in the exporting of whole fresh fish.	1.0000	1.7500	1.8333	2.4000	1.0000	1.5000	1.0000	3.6667	1.0000	1.2941	1.0000	1.2857	1.0000	
	1.0000	1.0000	2.0000	3.0000	1.0000	1.0000	1.0000	3.5000	1.0000	1.0000	1.0000	1.0000	1.0000	
	0.0000	1.2057	0.7528	0.8944	0.0000	1.2247	0.0000	0.8165	0.0000	0.5879	0.0000	0.7559	0.0000	
13 Geographical distance from export markets.	3.0000	2.9643	2.3333	2.4000	4.0000	2.5000	4.0000	2.5000	2.5000	2.7647	3.0000	3.7143	3.5000	
	3.0000	3.0000	2.5000	2.0000	4.0000	3.0000	4.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.5000	
	0.0000	0.9222	0.8165	0.5477	1.0000	0.8367	0.8165	0.8367	1.0000	0.7524	0.0000	0.9512	0.7071	
14 Small home-market.	1.5000	2.1786	2.6667	2.4000	2.3333	2.1667	3.7500	2.5000	2.0000	1.8824	2.3333	2.4286	4.0000	
	1.5000	2.0000	2.5000	2.0000	2.0000	2.0000	4.0000	2.0000	2.0000	2.0000	2.0000	2.0000	4.0000	
	0.5774	1.1564	0.8165	1.6733	0.5774	0.7528	0.5000	1.6432	0.8165	0.9924	2.3094	0.9759	0.0000	
15 Small size of the company.	1.2500	2.0000	2.0000	1.4000	3.0000	1.6667	1.7500	1.5000	1.7500	1.7647	1.0000	2.5714	2.0000	
	1.0000	2.0000	2.0000	1.0000	3.0000	2.0000	1.5000	1.5000	1.5000	2.0000	1.0000	3.0000	2.0000	
	0.5000	0.6667	0.8944	0.5477	0.0000	0.5164	0.9574	0.5477	0.9574	0.6642	0.0000	0.5345	1.4142	
16 Fluctuations in demand at the export markets.	2.7500	3.3571	3.3333	3.0000	3.3333	2.6667	2.7500	3.1667	2.5000	3.2553	3.3333	3.7143	2.5000	
	3.0000	3.0000	3.0000	3.0000	4.0000	3.0000	3.0000	3.0000	2.5000	3.0000	4.0000	4.0000	2.5000	
	1.2583	0.9114	0.5164	0.0000	1.1547	0.5164	0.5000	0.4082	0.5774	0.6642	2.0817	0.9512	0.7071	
17 Foreign exchange restrictions at export markets.	1.0000	1.4663	1.3333	1.0000	1.0000	2.0000	2.0000	1.0000	1.7500	1.5294	1.0000	1.2857	1.5000	
	1.0000	1.0000	1.0000	1.0000	1.0000	2.0000	2.0000	1.0000	1.5000	1.0000	1.0000	1.0000	1.5000	
	0.0000	0.8381	0.5164	0.0000	0.0000	0.8944	0.8165	0.0000	0.9574	0.7998	0.0000	0.7559	0.7071	
18 Language and cultural differences.	1.5000	1.7857	1.8333	1.2000	1.0000	1.5000	1.7500	1.1667	1.5000	1.6471	1.3333	1.5714	1.5000	
	1.5000	2.0000	2.0000	1.0000	1.0000	1.5000	1.5000	1.0000	1.5000	2.0000	1.0000	1.0000	1.5000	
	0.5774	0.7382	0.7528	0.4472	0.0000	0.5477	0.9574	0.4082	0.5774	0.7019	0.5774	0.9759	0.7071	
19 Finding reliable buyers abroad.	2.0000	2.4643	2.3333	2.0000	1.3333	2.1667	2.2500	1.5000	2.5000	2.4118	2.0000	2.0000	2.5000	
	2.0000	2.5000	2.0000	1.0000	1.0000	2.0000	2.0000	1.0000	2.5000	2.0000	2.0000	2.0000	2.5000	
	0.8165	0.7927	1.0328	1.4142	0.5774	1.1690	0.5000	0.8367	1.2910	0.8703	1.0000	0.8165	0.7071	
20 Foreign currencies fluctuations.	2.7500	3.2500	3.0000	2.4000	2.6667	3.1667	2.7500	2.0000	3.2500	3.3529	3.3333	3.2857	3.0000	
	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	2.5000	2.0000	3.0000	3.0000	3.0000	3.0000	3.0000	
	0.5000	0.9670	1.0954	0.8944	0.5774	0.4082	0.9574	0.8944	0.5000	0.9315	0.5774	0.9512	0.0000	

Table 8.2. continued
Crosstabulation of Responses to the Question Concerning the Importance of Obstacles
or Problems Related to Exporting of Marine Products.

Obstacles or problems associated with exporting of marine products.	Principal EMC N=4	Other EMC N=28	PIE-1 N=6	PIE-2 N=5	PIE-3 N=3	PIE-4 N=6	PIE-5 N=4	ICED N=6	ICED BY AIR N=4	FROZEN N=17	SALTED N=3	OIL & MEAL N=7	CANNED N=2	
														Mean
21 Obtaining information about financial position of foreign buyers.	2.0000	2.3929	2.0000	2.0000	1.6667	2.3333	2.7500	1.8333	2.7500	2.1176	2.0000	2.2857	3.0000	
	2.0000	2.0000	2.0000	2.0000	2.0000	2.5000	3.0000	2.0000	3.0000	2.0000	2.0000	2.0000	3.0000	
	0.8165	0.9165	0.8944	0.7071	0.5774	0.8165	0.5000	0.7528	1.2583	0.8575	1.0000	0.9512	0.0000	
22 Export services provided by the Icelandic banks.	1.7500	2.4643	3.3333	1.0000	2.0000	2.5000	1.5000	1.8333	2.5000	2.3553	2.0000	1.8571	1.5000	
	1.5000	2.0000	2.0000	1.0000	1.0000	2.0000	1.5000	1.0000	2.5000	2.0000	2.0000	1.0000	1.5000	
	0.9574	1.2905	0.5164	0.0000	1.7321	0.8367	0.5774	1.3292	1.2910	1.4803	1.0000	1.2150	0.7071	
23 Technical requirements at export markets.	2.0000	2.3929	2.5000	1.6000	1.3333	2.3333	1.7500	1.8333	2.5000	2.2353	2.3333	1.5714	2.0000	
	2.0000	2.0000	2.0000	2.0000	1.0000	2.0000	2.0000	2.0000	2.0000	2.0000	2.0000	1.0000	2.0000	
	0.8165	0.9940	0.5477	0.5477	0.5774	0.5164	0.5000	0.7528	0.5774	1.1472	0.5774	0.7868	0.0000	
24 Financing export sales.	1.2500	2.6786	1.8333	1.0000	1.3333	3.0000	2.5000	1.6667	2.2500	2.3529	2.0000	1.8571	2.5000	
	1.0000	2.0000	2.0000	1.0000	1.0000	3.0000	2.5000	1.0000	2.0000	2.0000	2.0000	2.0000	2.5000	
	0.5000	1.1239	0.7528	0.0000	0.5774	0.6325	0.5774	1.2111	1.2583	1.3666	1.0000	0.6901	0.7071	
25 Geographical location of the company in Iceland.	1.2500	1.3929	1.5000	1.6000	1.0000	1.3333	1.2500	1.8333	1.4038	1.1765	1.6667	1.4286	1.0000	
	1.0000	1.0000	1.5000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2.0000	1.0000	1.0000	
	0.5000	0.8317	0.5477	0.8944	0.0000	0.5164	0.5000	1.3292	0.7211	0.3930	0.5774	0.7868	0.0000	
26 Meeting product quality requirements.	1.7500	1.8214	1.5000	1.2000	1.3333	1.6667	1.0000	1.6667	1.2500	1.4706	1.6667	1.8571	2.0000	
	2.0000	2.0000	1.5000	1.0000	1.0000	1.5000	1.0000	1.5000	1.0000	1.0000	2.0000	2.0000	2.0000	
	0.5000	0.7724	0.5477	0.4472	0.5774	0.8165	0.0000	0.8165	0.5000	0.6243	0.5774	0.8997	0.0000	
27 Price fluctuations at the export markets.	2.7500	3.1429	2.8333	3.2000	3.3333	2.8333	2.7500	3.3333	2.5000	2.9412	2.6667	3.7143	2.0000	
	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	2.5000	3.5000	2.5000	3.0000	3.0000	4.0000	2.0000	
	0.5000	1.0079	0.4082	0.8367	0.5774	0.7528	0.9574	0.8165	0.5774	0.9663	0.5774	0.5759	0.0000	
28 High production cost in Iceland.	3.2500	3.2857	3.3333	2.8000	3.6667	3.1667	2.7500	2.5000	2.7500	3.4118	2.3333	3.4286	2.5000	
	3.5000	3.0000	3.5000	3.0000	4.0000	3.0000	3.0000	3.0000	3.0000	3.0000	2.0000	3.0000	2.5000	
	0.9574	1.0491	0.8165	1.4832	0.5774	0.7528	0.5000	1.2247	0.5000	0.9393	1.5275	0.5345	0.7071	
29 Labour union policy in Iceland.	2.0000	2.3214	3.0000	3.4000	2.3333	3.1667	1.7500	3.6667	2.5000	2.5294	2.6667	2.0000	2.0000	
	2.0000	3.0000	3.0000	3.0000	2.0000	3.0000	1.5000	3.5000	2.5000	2.0000	2.0000	2.0000	2.0000	
	0.0000	1.0905	0.8944	1.1402	0.5774	1.3292	0.9574	0.8165	0.5774	1.1789	1.1547	0.5774	1.4142	
30 Obtaining market information.	2.2500	2.2500	2.0000	1.8000	2.3333	2.1667	2.2500	1.6667	2.2500	2.1176	2.3333	2.2857	2.5000	
	2.0000	2.0000	2.0000	2.0000	3.0000	2.0000	2.0000	2.0000	2.5000	2.0000	2.0000	2.0000	2.5000	
	0.5000	0.6455	0.6325	0.4472	1.1547	0.7528	0.5000	0.5164	0.9574	0.6002	0.5774	0.7559	0.7071	

8.1.2. Objectives in Exporting

There were 53 usable responses which ranked export objectives. Table 8.3. shows the frequency of firms' responses by indicating the number of firms and the percentage of firms, responding to each of the 9 factors included in the second question, and their order of ranking.

As indicated in Table 8.3., the three elements most frequently ranked by firms as the most important objective in exporting are: the building up of long-term relationships with foreign buyers, ranked by 35.8 per cent of managers; to sell only quality products, ranked by 18.9 per cent of managers; and to sell always at the highest possible prices, which was seen by 17 per cent of managers as the most important objective in exporting. By summarising the managers' selection of the first, second and third most important objectives in exporting, it appears that long term relationships and product quality are by far the most important export objectives. This could be read from the column "not selected", which shows that only 34.0 per cent and 39.6 per cent of managers, did not select the two respective factors as one of their three main export objectives. Comparable ratios for the seven other factors included in the question range from 60.4 per cent to 98.1 per cent.

Cross-tabulation of responses, shown in Table 8.3., indicates that among the Principal EMCs the most important export objectives are to build up long term relationship with foreign buyers, reliability in delivery and to sell as close to the final consumer as possible. Among other exporters the objectives look more diverse, although the main emphasis is generally, on the establishment of long-term relationship with foreign buyers. Among exporters of whole fish on ice (iced), two factors, i.e. to sell always at the highest possible prices and to sell fast and get quick payments, are more highly rated than other factors. Exporters of fish oil and fish meal similarly put much emphasis on export prices, and notable in Table 8.4. is the number of frozen product exporters who emphasise the two factors of "export prices" and "quick payment".

Among the 17 specialised exporters of frozen products, 5 managers rank the "highest possible export prices" as one of their 3 main objectives in exporting and 6 managers rank "fast selling and getting quick payments" as one of their two main export objectives. Conversely, exporters of products in consumer packs, (PIE-5, Canned), are not including these two factors of "high price" and "quick payments" in their domain of export objectives. The main export objectives of these exporters appear to be more geared towards the build up of long-term relationship with foreign buyers, product quality, and getting closer to the final consumer.

Table 8.3.

**Frequency Responses to the Question Concerning
the Main Objectives in Exporting.**

Objectives in Exporting of Marine Products.		First	Second	Third	Not
		Objective N=53	Objective N=53	Objective N=53	Selected
a To sell always at the highest possible prices.	Number of firms.	9	9	2	33
	Percentage of firms.	17.0%	17.0%	3.8%	62.3%
b Selling fast and getting quick payments.	Number of firms.	5	11	4	33
	Percentage of firms.	9.4%	20.8%	7.5%	62.3%
c To sell only quality products.	Number of firms.	10	6	16	21
	Percentage of firms.	18.9%	11.3%	30.2%	39.6%
d To maintain export stability by continuous supply and through the build up of minimum stock of products.	Number of firms.	0	1	0	52
	Percentage of firms.	0.0%	1.9%	0.0%	98.1%
e Reliability in delivery	Number of firms.	4	8	9	32
	Percentage of firms.	7.5%	15.1%	17.0%	60.4%
f To sell as close to the final consumer (user) as possible.	Number of firms.	2	4	6	41
	Percentage of firms.	3.8%	7.5%	11.3%	77.4%
g To build up the company's own brand name at the main export markets.	Number of firms.	2	2	3	46
	Percentage of firms.	3.8%	3.8%	5.7%	86.8%
h To build up long-term relationships with foreign buyers.	Number of firms.	19	8	8	18
	Percentage of firms.	35.8%	15.1%	15.1%	34.0%
i To sell only to reliable buyers.	Number of firms.	2	4	5	42
	Percentage of firms.	3.8%	7.5%	9.4%	79.2%

Table 8.4. Cross-tabulation of Frequency Responses to the Question Concerning the Main Objectives in Exporting.
(Number of Firms)

Objectives in Exporting of Marine Products.	Principal EMC	Other EMC	PIE-1	PIE-2	PIE-3	PIE-4	PIE-5	ICED BY AIR	FROZEN	SALTED	OIL & MEAL.	CANNED
a To sell always at the highest possible prices	1.Objective	0	5	1	3	0	0	3	0	2	0	3
	2.Objective	1	4	1	3	0	0	2	0	1	1	0
	3.Objective	0	1	0	1	0	0	0	0	2	0	0
	Not Selected	3	18	5	0	0	6	4	1	4	12	2
b Selling fast and getting quick payments.	1.Objective	0	2	0	3	0	0	3	0	1	0	0
	2.Objective	0	9	0	1	0	0	3	0	5	1	0
	3.Objective	0	2	0	0	2	0	0	0	0	0	0
	Not Selected	4	15	6	1	3	3	4	0	4	11	2
c To sell only quality products.	1.Objective	1	5	0	0	2	2	0	2	1	2	0
	2.Objective	0	1	2	0	2	1	0	0	1	0	2
	3.Objective	1	8	2	3	1	0	1	4	1	6	0
	Not Selected	2	14	2	2	0	3	1	2	1	9	1
d To maintain export stability by continuous supply and through the build up of minimum stock of products.	1.Objective	0	0	0	0	0	0	0	0	0	0	0
	2.Objective	0	1	0	0	0	0	0	0	1	0	0
	3.Objective	0	0	0	0	0	0	0	0	0	0	0
	Not Selected	4	27	6	5	3	6	4	6	4	16	3
e Reliability in delivery	1.Objective	0	2	2	0	0	0	0	0	1	0	0
	2.Objective	2	2	2	0	0	1	1	0	1	4	0
	3.Objective	1	5	0	0	1	2	1	0	1	2	1
	Not Selected	1	19	2	5	2	3	2	6	2	10	2
f To sell as close to the final consumer (user) as possible.	1.Objective	1	0	1	0	0	0	0	0	2	0	0
	2.Objective	0	1	1	0	0	0	2	0	0	0	0
	3.Objective	2	2	1	0	0	0	1	0	0	2	2
	Not Selected	1	25	3	5	3	6	1	6	4	13	1
g To build up the company's own brand name at the main export markets.	1.Objective	0	0	0	1	0	0	0	0	1	0	0
	2.Objective	1	0	0	0	0	1	0	0	0	1	0
	3.Objective	0	1	1	0	1	0	0	0	1	0	0
	Not Selected	3	27	5	4	2	4	4	6	4	15	2
h To build up long-term relationships with foreign buyers.	1.Objective	2	10	3	0	0	2	2	0	0	7	1
	2.Objective	0	5	0	1	1	0	1	1	2	2	0
	3.Objective	0	4	1	0	1	1	1	0	1	2	0
	Not Selected	2	9	2	4	1	3	0	5	1	6	2
i To sell only to reliable buyers.	1.Objective	0	2	0	0	0	0	0	1	1	0	0
	2.Objective	0	3	0	0	0	1	0	0	2	0	0
	3.Objective	0	3	1	1	0	0	0	2	0	1	0
	Not Selected	4	20	5	4	3	5	4	4	3	13	3

8.1.3. Factors of Strength in Exporting

Managers' response to the third question, resulted in 53 usable responses to the first and second ranking, 52 to the third ranking and 51 usable responses to the fourth ranked factors of strengths. As indicated in Table 8.5., more than 60 per cent of the respondents selected either of the two factors, product quality (32.1%) or reliability and trust among its customers (30.2%) as their firm's main factor of strengths in exporting. By summarising managers' selection of the main factors of strengths, it appears that 91.4 per cent (100.0 - 8.6) and 74.3 per cent of managers perceived the two respective factors, reliability and trust among their customers, and the quality of the products they were exporting, as their firm's main strengths in exporting. Other factors most frequently selected as factors of strength were, firm's ability to respond quickly to domestic changes and at the export markets, and export marketing know-how and experience by the company's staff members.

Cross-tabulation of responses, of each of the 11 elements included in the third question, are listed in Table 8.6. As shown in the table, some of the factors indicated as strengths in exporting, are specifically associated with particular firm categories. Two of the four managers in the Principal EMCs perceived formal ties with domestic producers as two of their firm's most important factors of strengths, and 78.6 per cent of managers in the Other EMCs, perceive their quickness in responding to changes in the market place, as one of the four main factors of strengths their firms have in exporting. Among the PIE-1 firm managers, there is a strong perception that inclusion in the various sales networks organised by the Principal EMCs provides strengths for their companies, as 3 of the 6 PIE-1 managers included in the study, selected this factor as their most important factor of strengths. Among managers in the PIE-3 firms, and other exporters of fish oil and fish meal, (Oil & Meal) there is apparently a strong perception that product quality is the main strength these firms have in exporting. The importance of "having own production facilities and export

their own produce" is a factor strongly indicated by managers in the PIE-2 and PIE-4 firms, as a strength in exporting. Among managers in the PIE-5 firms, this factor is similarly highly rated as a factor of strengths. One factor not included in the question, i.e. "reliability in quantity or product supply" was mentioned by one PIE-1 manager, as the third main strength of his firm.

Table 8.5.

**Frequency Responses to the Question Concerning
the Company's Main Strengths in Exporting.**

Main Strengths in Exporting		First Strength N=53	Second Strength N=53	Third Strength N=52	Fourth Strength N=51	Not Selected
a Quality of the products exported.	N=	17	9	6	7	14
	%	32.1%	17.0%	11.5%	13.7%	25.7%
b The company's internal quality system.	N=	1	3	0	3	46
	%	1.9%	5.7%	0.0%	5.9%	86.6%
c Formal ties (contracts) with domestic producers (processors).	N=	2	4	2	2	43
	%	3.8%	7.5%	3.8%	3.9%	80.9%
d Quick to respond to domestic changes and at the export markets.	N=	6	4	7	16	20
	%	11.3%	7.5%	13.5%	31.4%	36.3%
e The firms distribution system at the export markets.	N=	0	0	1	3	49
	%	0.0%	0.0%	1.9%	5.9%	92.2%
f The company's own product brand image.	N=	0	2	2	2	47
	%	0.0%	3.8%	3.8%	3.9%	88.5%
g Reliability and trust, among it's customers.	N=	16	13	15	4	5
	%	30.2%	24.5%	28.8%	7.8%	8.6%
h Export marketing know-how and experience of, by the company's staff members.	N=	1	9	10	9	24
	%	1.9%	17.0%	19.2%	17.6%	44.3%
i To be a specialised export management company (agent)	N=	1	2	4	3	43
	%	1.9%	3.8%	7.7%	5.9%	80.8%
j To export it's own product and have it's own production facilities.	N=	6	6	5	1	35
	%	11.3%	11.3%	9.6%	2.0%	65.8%
k To be a part of a network of firms, which are selling their products collectively through special export organisations, in collective ownership.	N=	3	1	0	1	48
	%	5.7%	1.9%	0.0%	2.0%	90.5%

N = number of firms

Table 8.6. Cross-tabulation of Frequency Responses to the Question Concerning the Main Strengths in Exporting.
(Number of Firms)

Main Strengths in Exporting	Principal EMC	Other EMC	PIE-1	PIE-2	PIE-3	PIE-4	PIE-5	ICED	ICED BY AIR	FROZEN	SALTED	OIL & MEAL	CANNED	
a Quality of the products exported.	1.Strength	1	7	3	1	3	0	2	1	2	3	2	4	1
	2.Strength	0	4	2	0	0	1	2	0	0	5	0	1	1
	3.Strength	0	3	0	1	0	2	0	0	1	4	0	0	0
	4.Strength	2	4	0	0	0	1	0	0	0	3	0	1	0
	Not Selected	1	10	1	3	0	2	0	5	1	2	1	1	0
b The company's internal quality system.	1.Strength	1	0	0	0	0	0	0	0	0	0	1	0	0
	2.Strength	0	1	0	0	0	1	1	0	0	0	0	1	0
	3.Strength	0	0	0	0	0	0	0	0	0	0	0	0	0
	4.Strength	0	0	1	0	1	0	1	0	0	0	0	1	0
	Not Selected	3	27	5	5	2	5	2	6	4	17	2	5	2
c Formal ties (contracts) with domestic producers (processors)	1.Strength	1	1	0	0	0	0	0	0	0	2	0	0	0
	2.Strength	1	3	0	0	0	0	0	0	0	2	0	1	0
	3.Strength	0	2	0	0	0	0	0	0	0	0	0	1	0
	4.Strength	0	1	0	0	1	0	0	1	0	0	0	1	0
	Not Selected	2	21	6	5	2	6	4	5	4	13	3	4	2
d Quick to respond to domestic changes and at the export markets.	1.Strength	1	3	0	2	0	0	0	3	0	3	0	0	0
	2.Strength	1	2	0	1	0	0	0	0	0	1	1	0	0
	3.Strength	0	5	1	1	0	0	0	1	1	3	0	0	0
	4.Strength	0	12	2	1	0	0	1	2	1	5	1	2	1
	Not Selected	2	6	3	0	3	6	3	0	2	5	1	5	1
e The firms distribution system at the export markets.	1.Strength	0	0	0	0	0	0	0	0	0	0	0	0	0
	2.Strength	0	0	0	0	0	0	0	0	0	0	0	0	0
	3.Strength	1	0	0	0	0	0	0	0	0	1	0	0	0
	4.Strength	1	1	0	1	0	0	0	1	0	0	1	0	0
	Not Selected	2	27	6	4	3	6	4	5	4	16	2	7	2
f The company's own product brand image.	1.Strength	0	0	0	0	0	0	0	0	0	0	0	0	0
	2.Strength	0	0	1	0	1	0	0	0	0	0	0	1	0
	3.Strength	1	0	0	0	0	1	0	0	0	1	0	0	0
	4.Strength	0	1	0	0	0	1	0	0	0	1	0	0	0
	Not Selected	3	27	5	5	2	4	4	6	4	15	3	6	2

Table 8.6. continued

Cross-tabulation of Frequency Responses to the Question Concerning the Main Strengths in Exporting.
(Number of Firms)

Main Strengths in Exporting	Principal EMC		Other EMC	PIE-1	PIE-2	PIE-3	PIE-4	PIE-5	ICED	ICED BY AIR	FROZEN	SALTED	OIL & MEAL	CANNED
	EMC	EMC												
g Reliability and trust, among its customers.	1.Strength	0	13	0	1	0	2	0	2	0	4	0	3	0
	2.Strength	0	8	1	0	2	1	1	2	3	3	0	2	1
	3.Strength	1	4	3	2	0	2	3	2	0	4	2	1	1
	4.Strength	0	1	0	2	1	0	0	0	0	3	0	1	0
	Not Selected	3	2	2	0	0	1	0	0	0	1	3	1	0
h Export marketing know-how and experience of, by the company's staff members.	1.Strength	0	1	0	0	0	0	0	0	0	1	0	0	0
	2.Strength	2	5	1	1	0	0	0	2	0	2	1	1	0
	3.Strength	1	7	1	1	0	0	0	2	0	2	1	2	0
	4.Strength	0	4	1	1	0	2	1	2	1	3	0	0	1
	Not Selected	1	11	2	2	3	4	3	0	3	9	1	4	1
i To be a specialised export management company (agent).	1.Strength	0	1	0	0	0	0	0	0	0	0	0	0	0
	2.Strength	0	2	0	0	0	0	0	0	0	2	0	0	0
	3.Strength	0	4	0	0	0	0	0	1	0	1	0	0	0
	4.Strength	1	2	0	0	0	0	0	0	1	0	1	0	0
	Not Selected	3	19	6	5	3	6	4	5	3	14	2	7	2
j To export its own product and have its own production facilities.	1.Strength	0	0	0	1	0	3	2	0	1	2	0	0	1
	2.Strength	0	1	0	3	0	2	0	2	0	1	1	0	0
	3.Strength	0	1	0	0	3	0	1	0	1	0	0	3	1
	4.Strength	0	0	0	0	0	1	0	0	0	0	0	1	0
	Not Selected	4	26	6	1	0	1	0	4	2	4	2	3	0
k To be a part of a network of firms which are selling their products collectively through special export organisations, in collective ownership.	1.Strength	0	0	3	0	0	0	0	0	0	1	0	0	0
	2.Strength	0	0	1	0	0	0	0	0	0	0	0	0	0
	3.Strength	0	0	0	0	0	0	0	0	0	0	0	0	0
	4.Strength	0	0	1	0	0	0	0	0	0	0	0	0	0
	Not Selected	4	28	1	5	3	6	4	6	4	16	3	7	2

8.1.4. Factors of Weaknesses in Exporting

There were 53 usable responses to the first and second ranking of firms' main weakness in exporting, 48 responses to the third ranking and 38 responses to the fourth ranking. Table 8.7. shows the frequency in managers' selection of the 10 possible elements of weaknesses in their firm's exporting activity. As indicated in Table 8.7., there are two factors which most frequently are listed by managers as being of main weaknesses in exporting. First, inadequate financial resources or weak financial position and second, too much dependence upon few export markets. Only 23.8 per cent of the managers, who selected all the four factors of perceived weaknesses, did not include these two factors as one of their firm's four main factors of weaknesses in exporting. Other factors of weakness most frequently mentioned are: too much dependence upon few foreign buyers; too much product specialisation in exporting; and, relatively small company size.

Cross-tabulation of managers' responses, indicated in Table 8.8., shows that there are some perceived factors of weaknesses which are specifically related to certain types of firms. Among managers in the Other EMCs informal ties with producers are strongly indicated as a weakness, and 13 of the 28 Other EMC managers ranked this factor as their primary or second main weakness in exporting. Too much product specialisation was strongly indicated by managers in many Other EMCs, and in firms specialising in exporting of whole fish on ice, (Iced) as a factor of weaknesses in these firms export operation. Evidently, 3 of 6 specialised exporters of whole fresh fish on ice (Iced) indicated this factor as their principal weakness in exporting, and 32 per cent of managers in the Other EMCs, selected this factor as one of two main factors of weaknesses in their firm's exporting activity. Relatively small company size is a factor weakly indicated by managers as a company weakness, as more than 50 per cent of the managers, who responded to all the four ranking of firms weaknesses, did not select this factor. However, by considering the recording of this factor among the

PIE firm managers, it is interesting to observe in relation to the absolute size of the PIE firms, that managers in the PIE-1 firms indicated relatively much stronger perception of this factor as a weakness, than managers in the other PIE firms. One factor not included in the fourth question, i.e. "problem in getting access to producers to obtain more products for selling and exporting" was mentioned by one Other EMC managers as the fourth main factor of weakness in exporting.

Table 8.7.

**Frequency Responses to the Question Concerning
the Company's Main Weaknesses in Exporting.**

Main Weaknesses in Exporting		Main Weakness N=53	Second Weakness N=53	Third Weakness N=48	Fourth Weakness N=38	Not Selected
a Informal ties with producers.	N=	7	6	5	2	33
	%	13.2%	11.3%	10.4%	5.3%	59.8%
b Relatively small size of the company.	N=	4	10	3	6	30
	%	7.5%	18.9%	6.3%	15.8%	51.5%
c Inadequate financial resources or weak financial position.	N=	13	6	8	9	17
	%	24.5%	11.3%	16.7%	23.7%	23.8%
d To be a specialised export management company (agent).	N=	0	1	0	1	51
	%	0.0%	1.9%	0.0%	2.6%	95.5%
e Limited market- and export know-how possessed within the company.	N=	1	2	4	3	43
	%	1.9%	3.8%	8.3%	7.9%	78.1%
f Narrow export base, i.e. the company is too product specialised in it's exports of marine products.	N=	8	6	6	5	28
	%	15.1%	11.3%	12.5%	13.2%	47.9%
g Form of ownership.	N=	1	2	1	0	49
	%	1.9%	3.8%	2.1%	0.0%	92.3%
h Communication with other members of the supply chain, mainly producers.	N=	3	1	3	1	45
	%	5.7%	1.9%	6.3%	2.6%	83.6%
i Too much dependent on few export markets.	N=	12	12	6	7	16
	%	22.6%	22.6%	12.5%	18.4%	23.8%
j Too much dependent upon few foreign buyers.	N=	4	7	12	4	26
	%	7.5%	13.2%	25.0%	10.5%	43.7%

N = number of firms

Table 8.8. Cross-tabulation of Frequency Responses to the Question Concerning the Main Weaknesses in Exporting.
(Number of Firms).

Main Weaknesses in Exporting	Principal EMC	Other EMC	PIE-1	PIE-2	PIE-3	PIE-4	PIE-5	ICED BY AIR	FROZEN	SALTED	OIL & MEAL	CANNED
a Informal ties with producers.	1.Weakness	7	0	0	0	0	0	0	3	0	1	0
	2.Weakness	6	0	0	0	0	0	0	4	0	1	0
	3.Weakness	3	2	0	0	0	0	1	0	2	0	0
	4.Weakness	1	0	1	0	0	0	2	0	0	0	0
	Not Selected	4	11	4	4	3	6	4	8	3	5	2
b Relatively small size of the company.	1.Weakness	1	2	1	0	0	0	1	0	0	0	0
	2.Weakness	2	2	1	2	1	2	1	2	1	3	1
	3.Weakness	3	0	0	0	0	0	0	3	0	0	0
	4.Weakness	5	5	0	0	0	1	0	2	0	1	1
	Not Selected	4	17	2	3	1	5	1	6	2	10	3
c Inadequate financial resources /weak financial position.	1.Weakness	4	2	0	1	4	2	0	4	0	2	1
	2.Weakness	4	1	0	0	0	0	2	0	2	0	0
	3.Weakness	5	1	1	0	0	1	1	0	3	0	0
	4.Weakness	5	2	0	2	0	0	1	2	1	0	2
	Not Selected	3	10	0	4	0	2	1	2	1	7	3
d To be a specialised export management company (agent).	1.Weakness	0	0	0	0	0	0	0	0	0	0	0
	2.Weakness	1	0	0	0	0	0	0	0	1	0	0
	3.Weakness	0	0	0	0	0	0	0	0	1	0	0
	4.Weakness	1	0	0	0	0	0	0	0	0	0	0
	Not Selected	4	26	6	5	3	6	4	6	16	2	7
e Limited market- and export know-how possessed within the company.	1.Weakness	1	0	0	0	0	0	0	1	0	0	0
	2.Weakness	0	0	2	0	0	0	0	1	0	0	0
	3.Weakness	0	1	1	1	0	0	1	0	1	0	1
	4.Weakness	0	0	1	0	0	2	0	0	2	0	0
	Not Selected	3	27	2	4	3	4	3	6	4	12	3
f Narrow export base, i.e. the company is too product specialised in it's export of marine products.	1.Weakness	5	1	1	0	0	1	3	1	1	0	1
	2.Weakness	4	4	0	0	1	0	0	0	3	1	0
	3.Weakness	4	0	0	1	0	1	1	1	0	1	2
	4.Weakness	2	1	0	1	0	0	1	0	0	0	0
	Not Selected	1	14	5	3	2	5	1	2	2	10	1

Table 8.8. continued

Cross-tabulation of Frequency Responses to the Question Concerning the Main Weaknesses in Exporting.
(Number of Firms)

Main Weaknesses in Exporting	Principal EMC	Other EMC	PIE-1	PIE-2	PIE-3	PIE-4	PIE-5	ICED	ICED BY AIR	FROZEN	SALTED	OIL & MEAL	CANNED
g Form of ownership.	1.Weakness	0	1	0	0	0	0	0	0	0	0	0	0
	2.Weakness	0	0	0	0	1	0	0	0	0	0	1	0
	3.Weakness	1	0	0	0	0	0	0	0	0	1	0	0
	4.Weakness	0	0	0	0	0	0	0	0	0	0	0	0
	Not Selected	3	27	6	5	2	5	5	6	4	7	2	6
h Communication with other members of the supply chain, mainly producers.	1.Weakness	1	1	0	0	0	1	0	1	0	1	0	0
	2.Weakness	0	1	0	0	0	0	0	0	0	0	0	0
	3.Weakness	1	2	0	0	0	0	0	0	1	0	1	0
	4.Weakness	0	1	0	0	0	0	0	0	1	0	0	0
	Not Selected	2	23	6	5	3	5	4	5	4	15	2	6
i Too much dependent on few export markets.	1.Weakness	2	5	0	2	2	0	1	1	1	4	1	2
	2.Weakness	0	6	1	3	0	1	1	2	1	3	0	0
	3.Weakness	1	4	0	0	0	1	0	1	0	3	0	1
	4.Weakness	1	5	0	0	0	1	0	1	0	1	2	0
	Not Selected	0	8	5	0	1	3	2	1	2	6	0	2
j Too much dependent upon few foreign buyers.	1.Weakness	0	2	1	1	0	0	0	0	0	2	1	1
	2.Weakness	2	2	0	1	0	1	1	1	0	2	1	0
	3.Weakness	1	4	2	1	1	2	1	1	1	2	1	1
	4.Weakness	0	3	0	0	0	0	1	0	0	2	0	1
	Not Selected	1	17	3	2	2	3	1	4	3	9	0	1

Conclusions

The results presented in this chapter are largely consistent with the qualitative findings presented in Chapter 6 and Chapter 7.

The factors indicated by managers as export obstacles appear to be predominantly industry or country specific. The factors recorded as somewhat problematic in exporting, with a mean or median response of 3 or greater are: unstable business environment in Iceland; subsidies granted to foreign competitors; high transportation cost; high production cost; fluctuations in demand at export markets; seasonal fluctuations in the fish supply; high real exchange rate of the Icelandic króna; foreign currency fluctuations; price fluctuations in the export markets; geographical distance from export markets; import tariffs in foreign markets; and supply shortage of fish due to catch restrictions in Icelandic waters. Cross-tabulation of responses showed that the obstacles to exporting vary significantly among the different group of exporters, and four factors were identified as problematic only in the exporting of particular types of marine products or for specific group of firms in the sector. In contrast to the qualitative analysis in Chapter 6, the quantitative findings do not confirm the importance of "informal ties with producers" as an important obstacle in exporting for the Other EMCs. Although, this difference might possibly have some methodology explanations, Table 8.2., shows that the importance attached to this factor by managers of the Other EMCs, is on average around 2.5. Furthermore, it is noticeable, that in their response to the third question, nearly 50 per cent of managers in the Other EMCs cited this factor as one of the two main weaknesses their firms has in the exporting activity.

Export objectives are related to firms principal activity and the main products exported by firms. The most generally stated export objectives by firms in the sector are the building up long-term relationship with foreign buyers and the selling of quality products. The third factor signified by many firms as an important objective in

exporting is the seeking of highest possible export prices, which appeared especially important among exporters of commodities like whole fish on ice, fish oil and fish meal and some exporters of frozen marine products.

The factors most commonly perceived by managers as being the main strengths of their firms in exporting are quality of the products they are exporting and reliability and trust established among their customers. Other factors recorded in the survey as important firms strengths are: formal ties with domestic producers, recorded by the Principal EMCs; ability to respond quickly to market changes, recorded by the Other EMCs; and participation in the various sales networks organised by the Principal EMCs, indicated by the PIE-1 firms.

The factors most frequently recorded as being of weaknesses by the exporting firms are: weak financial position; too much dependence on few export market; too much dependence upon few foreign buyers; and too much product specialisation in exporting. An important weakness of the Other EMCs in exporting, is informal ties with producers. One Principal EMC manager, recorded "communication with producers" as the prime weakness of his firm, and another manager ranked this factor as the third most important weakness. However, only 5 of the 28 Other EMCs managers, ranked this factor as one of their firms' four main factors of weaknesses in exporting.

References Cited

¹ In this analysis as in our previous use of the term, firms are defined as "specialised exporters" if at least 70 per cent of their total export value derives from the exporting of one of the particular product categories. Testing was made on the effects of lowering the defined limits of specialised exporters down to 60 per cent share in the total export value. The effects of such changes however, only increased by one the number of firms defined as specialised exporters.

IV. Conclusions

9. Conclusions

9.1. Summary of Main Findings

The principal aim of this thesis, as outlined in Section 1.1., was to examine the nature of the export sector of the Icelandic fishing industry, to explore the various factors which characterise the behaviour of firms exporting marine products from Iceland, and to identify factors which might explain some of the structural changes which took place within the export sector, especially during the 1980s. This necessarily included an initial study of all three sectors of the fishing industry and a review of the economic situation in Iceland, to provide a broader perspective for the thesis results.

The first part of the thesis outlined the main characteristics of the Icelandic economy, and emphasised the country's apparently small economic size, relatively large geographical distance from other countries and market areas, small population number, high dependence on exporting of primary commodities, and a relatively high level of GDP per capita compared to other developed countries.

The analysis undertaken in Chapter 2 showed that the country's economic performance is significantly driven by exporting, and highly dependent on the performance of the fishing industry. The high dependence on exporting of natural resources, which in recent years has accounted for around 90 per cent of the annual total export value, has among other things led to more fluctuations in Iceland's export income and gross domestic products than in any other OECD country.

The ending of the last Cod War marked, in some sense, the beginning of a new era in the Icelandic fishing industry, which *inter alia* was characterised by large increases in fish harvesting, large investments both in the fishery and processing sectors, and major changes in the size and importance of different export markets for Icelandic marine products. During the 1970s, and 1980s the Icelandic fishing fleet grew significantly,

particularly the number of deep-sea trawlers and small boats, and in the processing sector the major investment was in land based freezing plants.

The significant growth in total harvesting in the 1970s and part of the 1980s, was due to both increased catch of some traditional groundfish species such as cod and haddock, and to increased exploitation of species such as capelin, Greenland halibut and beaked redfish. Reductions had to be made in the catches of many species, due to over-exploitation, in the 1980s and especially in the 1990s.

One of the peculiarities of the fishing industry is its susceptibility to seasonal fluctuations in harvesting due to environmental variations and conditions. In the processing sector the subsequent fluctuations in raw material supply are most apparent in the production of fish meal and fish oil, salting, and canned sectors. This sector has in recent years experienced a growing number of small land based processing firms, an increasing share of the groundfish catch being primary processed and frozen on board the fishing vessels, and since the mid 1980s an important share of the fish catch has been exported unprocessed on ice in containers to the main fresh fish markets in Europe. The number of landbased processing firms more than doubled between 1980 and 1990, and the share of the 50 largest firms in the sector, fell from around 65 per cent of the total value of raw material purchasing to around 55 per cent, over the ten years period. The size of these processing firms is generally very small, with around 70 per cent employing 10 people or fewer. Most are in primary processing, but an increasing number of primary processing firms have in recent years become involved in secondary processing, i.e. the production of various highly processed products in consumer or retail packaging.

The formation of the export sector largely took place in the the 1930s and 1940s, when 4 export organisations were established. Each of these export organisations specialised in the exporting of certain product categories, mainly frozen and salted. Initially all these organisations were granted an exclusivity in the exporting of their

specialised products, at least to certain export markets. This position was largely kept by these firms until in the 1980s and 1990s, and in some cases even still exists.

The analysis undertaken in Chapter 3 established three principal factors as characteristic for the development in the export sector during the 1980s. First, there was a relatively steady increase in the exporting of all the main product categories and considerable increases in the export prices of certain marine products. Second, during the 1980s the "principal export organisations" lost substantial share in the total export of marine products from Iceland, and a number of new firms entered the sector, especially in the second half of the 1980s. Third, in the 1980s significant changes appeared in the distribution of Icelandic marine products by market areas. The most apparent shift was in the exporting of frozen products from the U.S. market to the European market and the start of exporting of whole-frozen groundfish products to the markets in East Asia.

The standard frozen groundfish products, i.e. fillets and block, constitute the biggest share of the marine product exports in terms of value, but in terms of volume the products of pelagic species i.e. fish meal and fish oil, usually account for the biggest share. There tend to be significant fluctuations between years in the relative size of the different product categories in the total exports of marine products from Iceland. However, these variations are mainly linked to fluctuations in the export volume of capelin meal and capelin oil, and to variations in prices of the different marine products in the export markets.

Despite extensive deregulation within the fishing industry in recent years, its business environment is still shaped by a number of laws, regulations and government policy decisions, most notably the law governing the management of fisheries in Icelandic waters. Other important factors in the business environment, relate to import tariffs in some export markets, subsidies granted to foreign competitors by foreign governments, and government export regulations in Iceland. The poor profitability in

the fishery and processing sectors in recent years is mainly due to over-investments within these sectors, and to related debt burdens.

The literature review on export behaviour of firms, provided in Chapter 4, showed that most of the research on the export behaviour of firms, during the last twenty years or so, has been conducted in western industrialised countries. Most of these studies are restricted to a relatively small number of industries, usually those exporting manufactured or semi-manufactured goods. Very few studies have dealt with firms exporting various primary commodities, or industries where exporting is the prerequisite for existence and survival in the face of a small home market. The few studies which have focused on export behaviour of firms in developing countries have in most cases dealt with the dyadic relationship between exporters from developing countries and importers in developed countries. In summary the literature review established various features which we now consider.

Export entry and behaviour can be understood as an adoption of innovation and an innovation process. The process of internationalisation, at each stage, is shaped by the interaction of factors which are internal and external to the firm, such as market conditions, management characteristics and company characteristics. Advancing information technology, increased globalisation of markets and market planning are likely to shorten the internationalisation process of firms, which means that companies could by-pass some of the early stages.

There are a variety of factors which initiate exporting and export expansion, such as the receipt of unsolicited orders, saturated home markets and excess production capacity. Various management characteristics such as education and foreign living experience have also been shown to influence involvement in exporting. The initiating factors are however likely to differ somewhat between industries and countries.

The main factors of export barriers are, like the initiating factors, somewhat related to both industries and countries. The main export obstacles identified in the literature

have been shown to be import duties and tariffs, paperwork, transportation, firm's size, building up of distribution network and selection of reliable distributor, communication and cultural barriers. Other important export obstacles have been shown to be: financing export sale; obtaining funds to start exporting; collection of money from foreign buyers; foreign currency fluctuations; honouring letter of credits; obtaining financial information; gathering market information; different product and consumer standards; product characteristics; product price-quality dimension; large domestic market; competition in foreign markets; high production cost; and lack of people with experience and trading knowledge.

Through consideration of various management characteristics and attitudes towards exporting, we should be able to identify non-exporting firms who are likely to become exporters and successful exporters. This is especially important when decisions are made about the targeting of governmental programmes which aim to encourage and to enhance the export activity of firms.

For small exporting firms the behavioural relationship with importers in foreign markets is critically important and likely to affect the firm's export performance. However, advanced information and communication technology is likely to affect this part of the export process more than some other parts of it.

Finally, there is no clear formula for an export programme which guarantees successful export performance. It is impossible to state how the various marketing variables, company characteristics and management characteristics influence export performance, even though some findings show strong support for some variables.

In Chapter 5, the 60 firms included in this study are categorised, on the basis of their principal activity and the main products they are exporting. The two main categories of firms identified, on the grounds of their principal activity, are export management companies (EMCs), and partially integrated exporters (PIEs). A further sub-categorisation of the EMCs is into Principal EMCs, and Other EMCs. The Principal

EMCs comprises the 4 "principal export organisations" established in the 1930s and 1940s, and the Other EMCs, other export management companies in the sector, which specialise in exporting. The PIE firms are identified as companies which are partially backward integrated, i.e. in addition to their active involvement in the export sector, they are involved in at least one of the two other sectors of the industry. These firms are further categorised into five types, ranging from PIE-1 to PIE-5, mainly on the basis of the type of products these firms are producing and exporting.

It is estimated that the firms included in this study accounted for around 92 per cent of the total export value of marine products from Iceland in 1991. The EMCs are estimated to have handled around 85-90 per cent of these exports, which reveals the extensive role of export management companies in the exporting of Icelandic marine products.

The exporting firms were further categorised on the basis of their main products exported, into fresh (iced), frozen, salted, dried, meal and oil, and canned. All the Principal EMCs, and more than 70 per cent of the 30 Other EMCs identified in the study, belong to the group of product specialised exporters, i.e. at least 70 per cent of their total export income derived from the exporting of one of the above listed product categories.

The general form of ownership of companies in the sector is shareholding, although many of the Other EMCs and PIE firms operate on a family basis. The Principal EMCs are distinct from other firms in the sector as being operated either on a co-operative basis, or primarily owned by their respective producers.

An important difference between the Principal EMCs, and the Other EMCs, is the form of relationships these two type of EMCs have with firms in the two other sectors of the fishing industry (fishery and processing). Among the Principal EMCs, relationships with producers are usually based on formal contracts, while the Other EMCs base their relationship with producers mainly on personal contacts.

The findings in this study show that there were both internal and external factors which initiated the establishment of most firms in the export sector in the 1980s, or stimulated a more active involvement of firms in other sectors of the industry into exporting. The internal factors identified are usually related to both personal characteristics, such as education, foreign living experience, entrepreneurial ambitions and experience in the fishing industry, and to firm characteristics, such as size, type of products exported and organisational objectives.

The most influential external factors motivating changes in the export sector during the 1980s were changes in technology, encouragement from outside parties such as foreign buyers and domestic producers, domestic and foreign governments regulations and policy, market conditions in export markets, and organisational structure and policy of some of the Principal EMCs. Further involvement of the PIE-1 firms into exporting was provoked by factors such as increasing marketing orientation and enthusiasm among managers in these firms, too much product specialisation of the Principal EMCs, inadequate level of communication between the PIE-1 firms and the Principal EMCs, and a failure by the Principal EMCs to respond to some structural changes within the fishing industry.

Although the selection of initial export markets was mainly affected by the type of marine products being exported by the firms, factors such as personal contacts, established through previous jobs or foreign living experience, were also important. Furthermore, the study revealed that the first export order, and selection of first export markets by managers of the Other EMCs and PIE firms, was usually not the result of any kind of systematic collection of information or export planning.

In the Icelandic fishing industry, the process of internationalisation is largely a case of "export or die". Consequently, firms usually leap straight into exporting without any prior development in the domestic market. The Principal EMCs have evidently moved furthest along the process of internationalisation, by investing in foreign sales

subsidiaries and foreign processing plants, while the Other EMCs and most of the PIE firms, generally sell directly to foreign buyers in the export markets, without the use of any middle-man. However, fish meal and oil, and whole fresh fish on ice, are the exception as they are usually sold through foreign agents. The use of foreign agents of Icelandic origin was seen by some exporters of whole fresh fish on ice, as important in bridging the information gap between the export markets and the respective fishermen in Iceland. Conversely, managers in many Other EMCs and PIE firms, who were frequently approached by Icelanders living abroad, searching for business contacts, reported a series of bad experiences from such contacts, and many claimed they had lost considerable amounts of money in such dealings.

The research established a number of factors, both internal and external, industry and country specific, which were perceived by managers as being of moderate hindrance in exporting, although they varied significantly among the different group of firms, both on the basis of their principal activity and main products exported. The factors recorded in the study as export obstacles were: unstable business environment in Iceland; subsidies granted by foreign governments to foreign competitors; high transportation cost to export markets; high production cost in Iceland; fluctuations in demand in export markets; seasonal fluctuations in the fish supply; high real exchange rate of the Icelandic króna; foreign currency fluctuations; price fluctuations in the export markets; geographical distance from export markets; import tariffs at foreign markets; and supply shortage of fish due to catch restrictions in Icelandic waters.

The thesis established that there remain important differences between the exporting firms in their export management and pursuit of export marketing strategies. Generally, the firms have not set themselves any clearly stated or written export objectives, but managers indicated that the most important export objectives are usually the building up of long-term relationship with foreign buyers, and the selling of quality products. However, a key finding of the research was that the export sector is

highly price orientated with many firms in the sector intent on seeking highest possible prices for their export each time. The emphasis on export prices is attributed to three principal factors: first, the nature of the export as a produce of natural resources, and which to a large extent is exported unprocessed or only primary processed commodity; second, the weak financial position of many firms in the fishery and processing sectors; third, the share based salary system in the fishery sector, which seems to have important knock on effects on to the two other sectors of the industry. This emphasis on export prices is apparently more perceptible among exporters of commodities like whole fish on ice, fish oil, fish meal and among exporters of some frozen marine products, particularly those frozen-at-sea. As products become more highly processed, the emphasis put by firms on export prices and getting quick payments is down-played in favour of building up a long-term relationship with foreign buyers.

Export planning activity by firms in the sector is affected by the uncertainty which exists in both produce supply and in product demand. However, export planning by the Principal EMCs is usually quite extensive and carried out in co-operation with their respective members such as the PIE-1 firms. In contrast, export planning by the Other EMCs and PIE firms is usually either very limited or non-existent. The lack of export planning is usually explained by factors such as the volatility in demand and prices in the export markets and the uncertainty which exists in fish catching and in relationships with producers.

There is generally a very limited use of export marketing research by firms in the sector, and only some of the Principal EMCs appear to allocate any financial resources for that purpose.

In export marketing management, clear differences exist between the Principal EMCs and other firms in the sector. The Principal EMCs have quite formal structures, are organised on a departmental basis and three of the four Principal EMCs operate sales

subsidiaries and processing plants abroad. Day to day relationships with foreign buyers and decisions related to exporting are usually in the hands of special sales and marketing staff in the respective units. In the Other EMCs and most of the PIE firms, exporting decisions and relationship with foreign buyers are typically in the hands of the respective managing directors, who frequently are also the principal owners of the firms.

It has been established in this thesis that a strategic use of marketing mix variables by firms in the sector is restricted to a relatively small number of firms, mainly to the Principal EMCs and some PIE-5 firms. In some areas of export management and marketing, the Principal EMCs, primarily S.H. and Í.S., have established clear a advantage over other firms in the sector. This is particularly in areas like product development, product quality control, product availability or supply, the establishing of product brand names, a bigger and more controllable marketing and distribution system and more diversification in exporting by export markets. In some markets the Principal EMCs have established a price premium in their exports, compared to other Icelandic exporters and foreign competitors, especially through their build up of good product quality image and reliability in product supply. For many of the Other EMCs and PIE firms, the Principal EMCs act as a benchmark for pricing and product quality standards.

This study has shown that, despite the general view among exporters that insufficient resources are being spent on product research and development by firms in the fishing industry, very few of the firms are strategically committed to laying out money for that purpose. This lack of commitment to product research and development was usually blamed by managers on the various tariff barriers which have existed in some of the export markets, the small size of their companies, and the general price orientation of firms in the fishing industry.

This study has revealed, that for an important share of the marine product exports, export prices do take account of the respective spot-market prices in the export markets. However as products become more highly processed, like the various products in consumer or retail packaging, more stability is established in export prices, as they are frequently fixed for a longer period of time.

One of the general characteristics of the export of most firms in the sector, is how concentrated it is in terms of markets and foreign buyers. This is especially apparent among many of the Other EMCs and PIE firms, where the biggest share of the exports is accounted for by only one or two export markets, and even only one or two foreign buyers.

Personal contact with customers, and visits to foreign buyers, are the two most commonly used promotional methods by firms in the sector, but company brochures and participation in trade exhibitions are also important.

While managers in the Other EMCs and PIE firms frequently used profit, export growth, and share in the total exports value of marine products from Iceland, as their main yardsticks on export performance, managers of the Principal EMCs usually stated export expansion into new export markets, product quality image, and perceived satisfaction among their respective producers, as their measure of export performance.

The research established that the Icelandic marine product exporters generally perceive the quality of their products, and trust established among their foreign buyers, as one of their main strengths in exporting. Formal ties with domestic producers are a particular strength of the Principal EMCs, while the ability to respond quickly to market changes is the main strength of the Other EMCs, and some of the PIE firms.

Relatively weak financial position and too much dependence on few export markets and foreign buyers are the most apparent weaknesses of firms in the export sector in

general. Too much product specialisation and informal ties with producers were also weaknesses frequently stated by some of the Other EMCs managers.

9.2. The Research Findings and their Theoretical Implications

The contribution of this study to the literature on export behaviour of firms is mainly twofold. First, it has identified factors which are characteristic for the export behaviour of small firms exporting primary commodities and which are faced with the situation of "export or die". Second, it has lent clear support to some of the themes within the current literature on export behaviour of firms.

The export behaviour of Icelandic marine product exporters is in most aspects influenced by the "export or die" characteristic of the Icelandic fishing industry. With limited domestic opportunities, companies in the fishing industry are faced with few options, and therefore exporters are reactive rather than proactive in their start of exporting. Exporting of marine products is an opportunistic business venture. The general price orientation of firms in the export sector, the perceived problems in exporting deriving from fluctuations in product demand and prices, very limited use of marketing research, and limited employment of marketing mix variables, are all factors which are believed to be strongly related to the nature of the products the firms are exporting. Furthermore, export behaviour of Icelandic marine product exporters is importantly influenced by the geographical location of the exporting firms, and a number of economic factors in Iceland.

Although, it seems that the export drivers are mainly external, the study has indicated that many of the managers in the Other EMCs and PIE firms were, what Tesar and Tarleton¹ called, "aggressive" in the seeking of their first export order. This obviously relates to the central role of exporting for the Icelandic fishing industry and the nature of the exporting firms, as generally being established with the special aim to start exporting but, not developing their export from their domestic activity.

The various management characteristics such as education, foreign living experience, enterprise, and profit, which all appeared in this study as important factors in motivating managers in the Other EMCs and PIE firms into exporting, relate to findings in various other studies such as by Dichtl et al.² and by Simmonds and Smith.³ Furthermore, the outlined management characteristics of many Other EMCs and PIE firm managers, are in line with the conceptualisations made by Roux⁴ of the "self-made-men" where all the main decisions about exporting are centrally made, usually by the principal owner of the firm. The identified role of domestic producers and foreign buyers in motivating managers in many of these firms to begin exporting, could also be related to the findings by Simmonds and Smith,⁵ and Lee and Brasch,⁶ showing the role of various "change agents" in initiating involvement in exporting. Similarly the fact that new transportation technology initiated the start of exporting by many of the firms exporting whole fresh fish on ice, is correspondent to research findings by Sullivan and Bauerschmidt⁷ and Rabino.⁸

Although the research provided indications that the heavy emphasis on export prices by the exporting firms is likely to overrule a disposition such as of "psychic distance", a concept introduced by Johanson and Wiederheim-Paul, the research found moderate support among managers for the validity of the notion. Managers in many of the Other EMCs and PIE firms which started exporting in the 1980s, and who primarily are exporting to the markets in the U.K. and in North Europe, usually perceived the European market as being closer in various terms, compared to for example the U.S. market. This means we could at least hypothesize that the factor of "psychic distance" was influential in bringing on changes in the geographical distribution of the export, during the late 1980s and early 1990s.

The process of internationalisation by the Icelandic marine product exporters, as shown in this study, seems to have only limited basis within the prevalent models of export development. As in some of the other aspects of the firms' export behaviour,

this relates to one of the industry's prime peculiarities, i.e. the firms' adoption of exporting without prior development in the domestic market. This explanation corresponds somewhat to the notion of Sullivan and Bauerschmidt,⁹ who felt that the industry characteristics of "export or die" among firms in the European forest industry which they studied, explained the lack of support for Johanson and Vahlne's internationalisation theory. However, despite the difficulties in placing the process of internationalisation of the Icelandic marine products exporters into any of the existing models of export development, various factors identified in this study conform to some of the important elements in these models. This applies to Cavusgil's¹⁰ proposition, that there is a tendency for larger firms to have progressed further along the internationalisation process, and that these firms are more likely to have special export divisions. Evidently, the three biggest firms in the export sector (S.H., Í.S., S.Í.F.) have moved furthest along the internationalisation process, and are the only firms in the sector which have special export divisions. However, in this respect it is important to understand the special position retained by these firms in exporting until the 1980s and 1990s, and the possible effects of that on their structure and position compared to other firms in the sector.

This research has shown that many of the most severe obstacles in exporting are strongly associated with the geographical location of the firms researched, the basic nature of the fishing industry and its types of product exported. The factors identified in the research as export barriers, and which arise in the export literature are, import tariffs, government export restrictions, foreign currency fluctuations, high domestic production cost and high transportation cost to export markets.

No direct attempt was made in this research, to relate different export marketing strategies used by the firms, to their export performance. However, information collected in the study, indicating the basic nature of the industry and various characteristics of the exporting firms, enable some conclusions to be drawn about the

applicability of different measures of export performance for firms in the sector. The fact that the fishing industry and firms in the sector are totally dependent upon exporting, means that the most common criterion of export performance, "export sale as a proportion of total sale", is an inappropriate measure. Furthermore, this measure is neither a good indicator of the firms' degree of internationalisation, as it gives little information about their nature and capacity to conduct an international operation. The danger of using such a measure is evident if we compare some of the smaller exporting firms of frozen groundfish products, included in the study, with the two Principal EMCs, S.H. and Í.S.. While the former group of firms frequently markets to only one or two foreign markets, and sometimes even to only one or two foreign buyers (often wholesalers), the latter firms export to a number of markets abroad and operate both sales offices and processing units in their main export markets.

The use of "export growth", which some managers in the Other EMCs and PIE firms used as their measure of export performance, could also be argued as inadequate. This is because the firms' export volume and income are significantly constrained by government limitations in the total allowable catch in Icelandic waters.

The use of "profit from exporting", a criterion used by managers in some Other EMCs and PIE firms, is also inadequate for measuring the export performance of most of the Principal EMCs, because of their current nature as non-profit¹¹ organisations, and consequently also inadequate for inter-firm comparison in the industry. Continuing transformation of the Principal EMCs into shareholding companies, and public trading of their shares in the market, means, however, that "profit from exporting" might in the future be one of the best measures of export performance of firms in the sector, both for measuring of the individual firm's export performance and for inter-firm comparison.

Another suitable criterion of export performance, suggested here for future application, and presently used by managers in some Other EMCs and PIE firms, is

"firm's relative share in the total export of marine products from Iceland". Employing this measure to evaluate the export performance of the Principal EMCs, such as of Síldarútvegsnefnd, in past years, is inappropriate as these firms either kept, or are keeping, exclusive export licences in their specialised product exports. Abolition of these special rights must inevitably lead to some reduction in the relative share held by these firms in the total export.

The third criterion for measuring the export performance of firms in the fishing industry, and suggested here as a possible future measure, is "the share of value added products in the firm's total export income". Providing it is a desirable objective for the Icelandic economy, and for the fishing industry as a whole, to add value to the marine harvest and products before exporting, this measure looks to be an adequate indicator of export performance. However, in contrast to the two measures, "profit" and "relative share", which both have the advantage of being fairly well defined and relatively simple to measure, the "value added" criterion has currently the apparent weakness of being subject to range of different definitions.¹² The establishment of a common definition, within each product category, of "value added fish products" is therefore essential for a viable use of this measure.

9.3. The Research Findings and their Implications for Marine Products Exporters and Government Policy in Iceland

The findings established in this research have implications, both for government policy in Iceland and for firms in the fishing industry, and raise important points for consideration by these parties.

The "export or die" situation of the Icelandic fishing industry, the industry's importance for the economic performance in Iceland, the general price orientation of firms in the export sector, and some of the stated export obstacles, outlined in section 6.2., show that the Icelandic government has a decisive role to play in the creation of

more stability and the reduction of uncertainty in the business environment of the fishing industry. This involves in particular: foreign exchange policy; government laws and regulations concerning the management of fisheries in Icelandic waters; import tariffs in export markets, and domestic subsidies granted by foreign governments to foreign competitors. Furthermore, in the export sector of the fishing industry, the Icelandic government has played an important role in shaping the structure of the sector, through various changes in export regulations for marine products, such as the abolition of exclusive export licences to some of the Principal EMCs. The result has been an increase in the number of small exporting firms, more short-termism and price orientation in the exporting of marine products from Iceland. This study concludes, that the Icelandic government does have a role in promoting and facilitating more long-term views among companies in the Icelandic fishing industry, in areas like product development and export marketing.

Providing that no major increases could be made in the quantity of catch of the principal fish species (which seems quite a realistic assumption), and assuming that no similar increases in export prices could be obtained, as experienced during the 1980s and beginning of the 1990s, then it is reasonable to suggest that one of the few viable options for firms in the Icelandic fishing industry, is to increase their future export income by adding more value to their exports through increased processing. Results provided in the study, revealed that one of the main benefits gained from such a strategic move, both for exporters and the Icelandic economy in general, would be more stability in export prices and product demand, as this would result from more long term planning undertaken jointly between exporters and foreign buyers. However, the high production cost in Iceland, geographical distance from export markets and high transportation cost to export markets, are indicated in the study as possible barriers associated with such a move. Additionally, the very small size of the domestic market in Iceland could also act as a barrier. It was the general view among

exporters who are involved in the exporting of various products in retail or consumer packs, that a move towards the production and exporting of more highly processed marine products from Iceland, requires cooperation with foreign food retailing companies. It was also emphasised by these exporters that this export strategy requires the handling of firms which are financially strong, who are able to guarantee quality and stability in supply, and are committed to product development. These views are supported by the findings of Shaw et.al.¹³, who stressed the importance of suppliers being "capable of providing the appropriate quantity and quality of products and of supplying it at the correct service level," and also the "need for suppliers to be responsive to changes in the market, especially with regard to new product introduction." Based on the above, and the analysis of the exporting firms' characteristics and export behaviour, the firms which look most capable of moving into more exporting of various highly processed products, and transform the industry in that direction, are the larger firms in the sector such as the Principal EMCs, particularly because of their size, form of relationships with producers, and their quality control and commitment in product development.

9.4. Further Research

Although the results of this study are argued to provide some lessons about the export behaviour of firms exporting primary commodities, they must first and foremost be considered as specially related to Iceland and to firms exporting Icelandic marine products. The author of this thesis suggests that future research into the export sector, and the export behaviour of firms exporting Icelandic marine products, should consider the following aspects.

First, the significant role of EMCs in the exporting of Icelandic marine products (around 85-90 per cent of the total exports value), offers a reason to study the relationship between the EMCs, and producers in the two other sectors of the fishing industry. The different type of relationships between producers and the two types of

EMCs, i.e. Other EMCs and the Principal EMCs, requires special investigation, given that the export behaviour and policy of many EMCs, particularly Other EMCs, is significantly influenced by the price orientation of firms in the fishery and processing sectors, and in the case of the Other EMCs the informal ties they have with producers. Second, the relationships between exporters of marine products in Iceland, and foreign buyers could be studied. In this context, it would be especially interesting to investigate the level of stability and loyalty which exists in the relationship between these parties. Also, in the case of the EMCs, how their relationship with producers affects their relationship with foreign buyers. Such research would add to information already contained in this thesis, contribute to the increasing amount of export literature which focuses on relationships between exporters and importers, and address an area which was omitted in this research, due to financial and time constraints.

Third, despite the analysis undertaken in Chapter 7, more research is required on the impact of different export strategies and marketing management on the firm's export performance, using the proposed criteria of export performance, outlined in Section 9.2.. Carrying out this kind of study would enable the identification of successful export strategies and management for the different type of marine products exported by firms.

Fourth, comparative studies on the export behaviour of firms exporting marine products, such as in Norway and the Faroe-Islands, and even of firms in other countries exporting primary commodities, will facilitate a more thorough identification of factors which could be classified as specific for primary commodities, the particular products exported, or the country where the firms are based.

Fifth, the research findings showing the general price orientation of firms in the export sector, and the stated opinion of some exporters that the current and long established share based salary system in the fishery sector is partly to blame for that, raises

questions for specific research into the subject. Such investigation must address whether and possibly to what extent this factor is hampering or might hamper the development of the fishing industry into the processing and exporting of more highly processed marine products from Iceland.

Sixth, as shown in the research, various government laws and regulations have during the last decades been influential in shaping the structure of the export sector, and the fishing industry as a whole. In the light of the export sector's current structure and position, as mainly dependent upon the exporting of primary processed products, it is felt that in-depth research is required on the possible role of the Icelandic government in the exporting of marine products from Iceland. In particular, such research needs to address questions like whether the government has a role in supporting firms in the fishing industry towards more product development and the exporting of more highly processed marine products, and if so, in what way that should be done.

Seventh, as previously outlined, exporters included in the study generally perceived the quality of their products as one of their firms' main strengths in exporting. In order to get a better understanding of the success of some Icelandic exporters in the export markets, and of possible future strategies in the exporting of Icelandic marine products, research needs to be undertaken in the export markets, both among users (buyers) and consumers, on their perception of Icelandic fish and fish products.

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 - 11 When the interviews were conducted in 1992, Í.S. was the only firm included in the category of Principal EMCs which was operated as a shareholding company. However, at that time the company was closed for outside investors, but in 1993 the company's shares started to be traded publicly. In 1993 S.Í.F. was transformed into a shareholding company, and the Board of S.Í.F. has announced its intention to get the company's share traded publicly.
 - 12 Within the literature and the fishing industry, there seems to exist no clear definition of what is meant by the expression "value added fish products." Consequently, there exists a variety of different usages of the term in the literature. In the Globefish report, Vol.16, "the term value added refers to value that is added to a product from the time it enters the processing plant to the time it leaves. It describes the process which changes a product worth say \$10 in its basic state into a form which make it worth say \$15."
(Josupeit, Helga. De Franssu, Luc. "The EEC Markets For Value Added Fishery Products from Developing Countries." FAO/Globefish Research Programme Vol.16)
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¹³ Shaw, S.A., Dawson, J.A., Blair, L.M.A. "The Sourcing of Retailer Brand Food Products" Working Paper Series No. 91/17 Department of Business Studies, University of Edinburgh, 1991.

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APPENDICES

Appendix 1.1.

Edinborg 20.02.1992



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Ágæti framkvæmdastjóri.

Undirritaður hefur undanfarna 16 mánuði unnið að rannsókn við viðskiptadeild Edinborgarháskóla í Skotlandi er miðar að því að kanna útflutningshegðun íslenskra fyrirtækja er flytja út sjávarafurðir. Gert er ráð fyrir að niðurstöður rannsóknarinnar verði megin hluti í væntanlegri doktorsritgerð undirritaðs við háskólann. Rannsóknin nýtur fjárhagslegs stuðnings frá breska sendiráðinu á Íslandi.

Miklar breytingar hafa átt sér stað á undanfönum árum í útflutningi sjávarafurða frá Íslandi, einkum hvað varðar: fjölda útflutningsfyrirtækja, markaðssvæði, útflutnings aðferðir og tegundir sjávarafurða. Þrátt fyrir óumdeilanlegt mikilvægi útflutnings sjávarafurða fyrir efnahagslega afkomu á Íslandi, þá hafa mjög litlar rannsóknir verið gerðar á þessu mikilvæga sviði sjávarútvegsins. Rannsókn mín, er ætluð sem framlag til úrbóta á þessu sviði. Til þess að svo megi verða þarfnast ég hinsvegar þinnar hjálpar. Þátttaka þín í rannsókninni er ómetanlegt framlag í því að kanna hvernig fyrirtæki sem flytja út íslenskar sjávarafurðir haga málum sínum á ýmsum sviðum útflutningastarfseminnar og hvert viðhorf stjórnenda er til ýmissa mikilvægra þátta henni tengt. Hér með óska ég eftir að lá að taka persónulega viðtal við yður, í því skyni að varpa ljósi á mikilvæg atriði í útflutningshegðun íslenskra fyrirtækja er flytja út sjávarafurðir.

Úrtak fyrirtækja í rannsókninni er byggt á upplýsingum úr "Directory of Icelandic Exporters" útgefinni af Útflutningsráði Íslands í janúar 1992, ásamt upplýsingum frá Aflamiðlun, yfir stærstu aðila í útflutningi íslisks í gámum frá Íslandi.

Áætlanir mínar gera ráð fyrir, að ég ljúki töku viðtala við útflytjendur á tímabilinu frá apríl til ágúst á þessu ári. Ég mun í fyrri hluta mars mánaðar n.k. hafa samband við þig símileiðis og óska eftir því að við ákveðum hentugann tíma til viðtalsins. Ég vil taka skýrt fram, að með allar upplýsingar sem fengnar verða frá yður, hvort heldur eru munnlegar eða í rituðu formi, lofa ég að fara með sem algjört trúnaðarmál.

Með bestu kveðju,

Arnar Bjarnason, Cand-Ocean, MBA

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Appendix 1.2.

List of Firms Interviewed.

No	Date of Interview	Name of Firm	Name of Interviewee
1	06.05.92	Fiskafurðir hf.	Jón Sigurðarson
2	07.05.92	Tryggvi Pétursson & Co	Tryggvi Pétursson
3	08.05.92	Triton hf.	Örn Erlendsson
4	12.05.92	Sævörur hf.	Ívar Pálsson
5	13.05.92	Stefnir	Hjörtur Eiríksson
6	14.05.92	Síldarverksmiðjur ríkisins	Jón Reynir Magnússon
7	15.05.92	Síldarútvegsnefnd	Einar Benediktsson
8	16.05.92	Ísfang	Ólafur Halldórsson
9	18.05.92	Seifur hf.	Rafn Haraldsson
10	19.05.92	Íslenskt Marfang hf.	Björn Ólafsson
11	21.05.92	Íspólar hf.	Einar Guðbjörnsson
12	21.05.92	Marbakki hf.	Jón Guðlaugur Magnússon
13	22.05.92	Jón Ásbjörnsson	Jón Ásbjörnsson
14	25.05.92	Íslenska umboðssalan hf.	Bjarni V. Magnússon
15	25.05.92	Síldarvinnslan Neskaupstað	Finnbogi Jónsson
16	26.05.92	Íslenska útflutningsmiðstöðin	Óttar Yngvason
17	27.05.92	Fiskiðjan Skagfirðingur hf.	Einar Svansson
18	29.05.92	Hafex hf.	Ólafur Sigurðsson
19	29.05.92	G. Ingason	Guðmundur Ingason
20	02.06.92	Í.S.	Benedikt Sveinsson
21	02.06.92	Bernhard Petersen hf.	Bernhard Petersen / Gunnar Petersen
22	03.06.92	Skipaþjónusta Suðurlands sf.	Hafsteinn Ásgeirsson
23	04.06.92	Gámavinir hf.	Snorri Jónsson
24	04.06.92	Ísfélag Vestmannaeyja hf	Magnús Kristinsson
25	06.06.92	Vignir G. Jónsson	Vignir G. Jónsson
26	09.06.92	Hrellir hf.	Guðjón Þorbjörnsson
27	10.06.92	Eyfell hf.	Ragnar Sigurjónsson
28	11.06.92	R. Hannesson	Ríkarð Hannesson
29	15.06.92	S.H.	Friðrik Pálsson
30	16.06.92	Andri hf.	Haraldur Haraldsson
31	16.06.92	Toppfiskur	Jón Steinn Elfsson
32	18.06.92	Norfisk	Eyþór M. Haraldsson
33	19.06.92	Lýsi hf.	Ágúst Einarsson
34	22.06.92	Haraldur Böðvarsson hf.	Haraldur Sturlaugsson
35	23.06.92	Ferskfiskur sf.	Tómas Þorsteinsson

List of Firms Interviewed. (continued)

No	Date of Interview	Name of Firm	Name of Interviewee
36	24.06.92	Bakkavör hf.	Ágúst Guðmundsson
37	25.06.92	Krossanes hf.	Jóhann P. Anderssen
38	25.06.92	K.Jónsson	Kristjón Jónsson / Einar Eyland
39	26.06.92	Samherji hf.	Þorsteinn Már Baldvinsson.
40	29.06.92	SÍF	Sigurður Haraldsson / Ásbjörn Björnsson
41	27.06.92	Fiskmiðlun Norðurlands hf	Hilmar Danfællsson
42	30.06.92	Grandi hf.	Brynjólfur Bjarnason
43	30.06.92	Fiskanaust hf.	Emil Bogason
44	01.07.92	Íslenskt-franskt eldhús	Gunnlaugur Guðmundsson
45	02.07.92	Gunnar I. Hafsteinsson	Gunnar I. Hafsteinsson
46	03.07.92	Nes hf.	Jónas Hallgrímsson
47	03.07.92	Faxamjöl hf.	Gunnlaugur Sævar Gunnlaugsson
48	06.07.92	Íslenskur gæðafiskur hf.	Albert Svavarsson
49	07.07.92	Vísir hf.	Pétur Pálsson
50	07.07.92	Vogar hf.	Sigurður Garðarsson
51	08.07.92	Fisco hf.	Kristján Þór Gunnarsson
52	13.07.92	Ísmark hf.	Þorleifur Ólafsson
53	14.07.92	Stálskip hf.	Guðrún Lárusdóttir
54	14.07.92	Tros hf.	Logi Þormóðsson
55	14.07.92	Luna Seafood International	Þorsteinn Máni Árnason
56	16.07.92	E.Ólafsson Marketing	Eyþór Ólafsson
57	16.07.92	Síldarréttir hf.	Egill Thorarensen
58	17.07.92	Íslenskar afurðir hf.	Katrín Þorvaldsdóttir
59	23.07.92	Kleifar / Sæhamar hf.	Guðjón Rögnvaldsson
60	23.07.92	Vinnslustöðin hf.	Sighvatur Bjarnason

Appendix 1.3.

University of Edinburgh
Department of Business Studies
William Robertsson Building
50 George Square.

Date of interview: _____

Time: From: _____ To: _____

Place: _____

The Icelandic Fishing Industry: The Nature and Behaviour of its Export Sector.

Factual Questions.

Name of firm: _____

Location: _____

Established / year _____

Start of exporting / year _____

Name of Respondant: _____

Age: _____

Position _____

Type of firm: _____

(Private/Partnership/Co-operative/Limited company/PLC)

Number of employees: _____

Number of marketing staff _____

(sales people, etc.)

Total sales (income) in millions of ISK:

1991

1990

1989

1988

1987

Export sales as a percentage of total sales

1991	1990	1989	1988	1987
_____%	_____%	_____%	_____%	_____%

Exports by market areas (%) (Year 1991)

EFTA	EC	US	ASIA	E-EUROPE	OTHERS
_____%	_____%	_____%	_____%	_____%	_____%

Distribution of exports of fish and fish products by countries. (%)
(Year 1991)

US.	UK.	France	Germany	Holland	Russia
_____%	_____%	_____%	_____%	_____%	_____%
Canada	Denmark	Sweden	Italy	Spain	Portugal
_____%	_____%	_____%	_____%	_____%	_____%
Japan	Others				
_____%	_____%				

Share of Products Categories in the Total Export Value of Fish and Fish Products:
(Year 1991)

Frozen	Salted	Dried	Meal	Oil	Canned
_____%	_____%	_____%	_____%	_____%	_____%
Iced	Iced in Containers				
_____%	_____%				

Number of manufacturing units abroad and location:

No: _____

Location: _____

Location: _____

Location: _____

Number of sales office abroad and location:

No: _____

Location: _____

Location: _____

Location: _____

Location: _____

Appendix 1.4.

Question 1.

This questionnaire lists a number of factors which could be seen as problems or obstacles associated with exporting of marine products from Iceland. Please indicate how problematic the following factors are for your company in exporting marine products from Iceland by circling one of the five possible answers available to each statement, reaching from: not at all problematic to extremely problematic.

	Not at all problematic	Not very problematic	Somewhat problematic	Very problematic	Extremely problematic
1. Paperwork	1	2	3	4	5
2. Seasonal fluctuations in the fish supply	1	2	3	4	5
3. High real exchange rate of the Icelandic króna	1	2	3	4	5
4. Unstable business environment in Iceland	1	2	3	4	5
5. Informal ties (contracts) with producers (processors)	1	2	3	4	5
6. Import tariffs at some foreign markets	1	2	3	4	5
7. High transportation cost from Iceland to export markets	1	2	3	4	5
8. Export monopoly licences retained by some exporters of marine products. (The IcelandHerring Board)	1	2	3	4	5
9. Subsidies granted by foreign governments to their domestic firms which are exporting marine products or products which are substitute to marine products.	1	2	3	4	5
10. The export of whole fresh fish on ice from Iceland	1	2	3	4	5
11. Supply shortage of fish in Iceland due to catch restrictions	1	2	3	4	5
12. Governmental restrictions limiting the exported amount of whole fresh fish on ice	1	2	3	4	5
13. Geographical distance from export markets.	1	2	3	4	5

	Not at all problematic	Not very problematic	Somewhat problematic	Very problematic	Extremely problematic
14. Small home-market	1	2	3	4	5
15. Small size of the company	1	2	3	4	5
16. Fluctuations in demand at the export markets	1	2	3	4	5
17. Foreign exchange restrictions at some export markets (i.e. in the import countries)	1	2	3	4	5
18. Language and cultural differences	1	2	3	4	5
19. Finding reliable buyers abroad	1	2	3	4	5
20. Foreign currencies fluctuations	1	2	3	4	5
21. Obtaining information about the financial position of some potential buyers abroad	1	2	3	4	5
22. Services provided by the Icelandic banks in relation to exporting	1	2	3	4	5
23. Technical requirements at some of the export markets	1	2	3	4	4
24. Financing export sales	1	2	3	4	5
25. Geographical location of the company in Iceland	1	2	3	4	5
26. Meeting product quality requirements demanded by foreign buyers	1	2	3	4	5
27. Price fluctuations at the export markets	1	2	3	4	5
28. High production cost in Iceland	1	2	3	4	5
29. Labour union policy in Iceland	1	2	3	4	5
30. Obtaining market information about foreign markets for marine products.	1	2	3	4	5

Question 2.

Please select the three main objectives of your company in its export of marine products and rank them in order of importance, with 1 as the most important, 2 as the second most important and 3 as the third most important.

What are the main objectives of your company in its export of marine products?

- a) To sell always at the highest possible prices
- b) Selling fast and getting quick payments
- c) To sell only quality products
- d) To maintain export stability
by continuous supply and through
the build up of minimum stock level
- e) Reliability in delivery
- f) To sell as close to the final
consumer (user) as possible
- g) To build up the company's
own brand name at the main
export markets
- h) To build up long-term relationships
with foreign buyers
- i) To sell only to reliable buyers
- j) Other. Please list.....

Question 3.

Please indicate the main strengths of your company and rank them in order of importance, with 1 as the most important, 2 as the second most important, 3 as the third most important and 4 as the fourth most important.

What do you perceive as the main strengths of your company in its exporting activity?

- a) Quality of the products exported.
- b) The company's internal quality system
- c) Formal ties (contracts) with domestic producers (processors).
- d) Quick to respond to domestic changes and at the export markets.
- e) The firm's distribution system at the export markets.
- f) The company's own product brand image.
- g) Reliability and trust, among its customers.
- h) Export marketing know-how and experience of by the company's staff members.
- i) To be a specialised export management company (agent)
- j) To export its own product and have its own production facilities.
- k) To be a part of a network of firms, which are selling their products collectively through special export organisation, in collective ownership (SH, SÍF, ÍS, Síldarútvegsnefnd).
- l) Other. Please list.....

Question 4.

Please indicate the main weaknesses of your company and rank them in order of importance, with 1 as the most important, 2 as the second most important, 3 as the third most important and 4 as the fourth most important.

What do you perceive as the main weaknesses of your company in its exporting activity?

- a) Informal ties (contracts) with producers (processors)
- b) Relatively small size of the company
- c) Inadequate financial resources /weak financial position
- d) To be a specialised export management company (agent)
- e) Limited market- and export know-how possessed within the company.
- f) Narrow export base, i.e. the company is to product specialised in its exports of marine products.
- g) Form of ownership
- h) Communication with other members of the supply chain.
- i) Too dependent on few export markets
- j) Too dependent upon few buyers
- k) Other. Please list:

Thank you for your time and co-operation.

Edinborg 28.04.1993



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Nú er taþlega ár liðið frá því að ég tók viðtal við þig og 63 aðra forsvarsmenn 60 íslenskra fyrirtækja er flýta út sjávarafurðir frá Íslandi. Þessi viðtöl eru eins og áður hefur komið fram megin brunnur upplýsinga í væntanlegri doktorritgerð minni sem að öllum líkindum mun bera nafnið: "Export or Die. The Icelandic Fishing Industry. The Nature and Behaviour of its Export Sector."

Öll viðtölin voru tekin upp á segluband og síðan vélrituð upp. Ég hef nú lokið að mestu við að greina allar mikilvægustu upplýsingar úr fyrirnefndum viðtölum og vinn þessa mánuðina að ritun ritgerðarinnar og samantekt á niðurstöðum.

Til þess að fylgja eftir nokkrum mikilvægum þáttum sem fram komu í ofangreindum viðtölum, þá eru hér meðfylgjandi 4 krossaspurningar sem mig langar til að biðja þig að svara eftir bestu samvisku. Þegar þú hefur lokið við að svara fyrirnefndum spurningum, langar mig að biðja þig að setja þetta spurningablað í meðfylgjandi umslag og setja í póst. (Umslagið er þegar frímerkt og með árituðu heimilistangi).

Algjörum trúnaði er heitið af minni hálfu, hvað varðar svör þín við eftirlfarandi spurningum, eins og með allar fyrri upplýsingar sem ég hef fengið hjá þér og fyrirtæki þínu, hvort heldur voru munnlegar eða skriflegar.

Að lokum þetta: Ég veit þú ert upp fyrir haus í verkefnum.
Það tekur þig hins vegar, aðeins **5 mínútur** að svara eftirlfarandi
4 spurningum.

Með því að gera það núna þá:

- 1) Hjálpar þú mér við gerð rannsóknarinnar.
- 2) Sparar mér hugsanleg símtöl til að minna á spurningalistann.
- 3) Sparar þér tíma í að tala við mig aftur.

Með bestu kveðju
og óskum um gleðilegt sumar.

Arnar Bjarnason

Spurning 1. er á baksíðu þessa blaðs.

Fyrsta spurning

Í þessari spurningu er að finna yfirlit yfir nokkra þá þætti sem oti á trúnum kunna að skapa erfiðleika eða jafnvel virka sem hindrun í úflutningi sjávarafurða frá Íslandi. Til þess að geta til kynna mikilvægi hvers og eins þeirra fyrir þitt fyrirtæki, þú vinsamlega settið hring um þá tilustafi sem komast næst því að endurspegla alstöðu þína til eftirfarandi fullyrðinga.

	Alls ekki vandandi	Fáki mikinn vandandi	Nokkuð vandandi	Mjög mikinn vandandi	Sérstaklega mikinn vandandi
1 Þappírsvinna (úflutningsleyfi, skobnarvottad og fleira)	1	2	3	4	5
2 Árstöðuveitur í fiskveiðum á Íslandi og þor með fiskframleiðni	1	2	3	4	5
3 Hátt raunvergi íslensku krónunnar	1	2	3	4	5
4 Óstöðugi rekstrarumhverfi á Íslandi	1	2	3	4	5
5 Ófórnleg tengsl við framleiðendur	1	2	3	4	5
6 Inntilfutinguvaldi á erlendum markaðum	1	2	3	4	5
7 Þuningskennandi frá Íslandi til erlendra markaða	1	2	3	4	5
8 Óþunnt einkaleyfi til úflutnings á sjávarafurðum (t.d. Silurabúspesafind)	1	2	3	4	5
9 Úflutningsskyrtil erlendra samkeppnislyritstekja sem veitur eru af stöðvöldum í viðkomandi löndum	1	2	3	4	5
10 Úflutningar á heilum fiski, kæblum eða ísvörðum (overkubnum)	1	2	3	4	5
11 Fiskmarkað Íslandarinnar á Íslandi vegna óþunnta alþiðmarkaða	1	2	3	4	5
12 Óþunntar fiskmarkaðir (úflutningar á heilum fiski, kæblum eða ísvörðum (overkubnum))	1	2	3	4	5

	Alls ekki vandandi	Fáki mikinn vandandi	Nokkuð vandandi	Mjög mikinn vandandi	Sérstaklega mikinn vandandi
13. Landfræðileg fjárlægi frá úflutningsmörkuðum	1	2	3	4	5
14. Litill heimaaukagur	1	2	3	4	5
15. Smæð fyrirtækisins	1	2	3	4	5
16. Sveiflur í efturspur á úflutningsmörkuðum	1	2	3	4	5
17. Takmarkanir á gjaldyfirráðslum í innflutningslandi	1	2	3	4	5
18. Misumunir í tungumáli og menningu	1	2	3	4	5
19. Finna áreðnallega kaupendur erlendis	1	2	3	4	5
20. Sveiflur í gengi erlendra gjaldmiðna	1	2	3	4	5
21. Öflun upplýsinga um fjárhagsstöðu hugsanlegra erlendra kaupenda	1	2	3	4	5
22. Þjófnaus íslendra banka vegna erlendra viðskipta	1	2	3	4	5
23. Ýmsar tæknilegar hindranir á erlendum mörkuðum	1	2	3	4	5
24. Fjarnogrunn útlutningsins	1	2	3	4	5
25. Landfræðileg staðsetning fyrirtækisins á Íslandi	1	2	3	4	5
26. Gæðarntur sem gefur eru til vörunnar á erlendum mörkuðum	1	2	3	4	5
27. Verðveiflur á erlendum mörkuðum	1	2	3	4	5
28. Háfræðisáhrif á Íslandi	1	2	3	4	5
29. Viðhorf og stefna verkalyðislagi á Íslandi	1	2	3	4	5
30. Öflun markaðsupplýsinga	1	2	3	4	5

Önnur spurning.

Vinsamlega merktu við þrjár af eftirlitandi staðhæfingum eftir mikilvægi þeirra, með því að gefa þeim einkunnina frá 1 til 3. Þú merkir 1 við þá staðhæfingu sem þú telur að sé mikilvægasta markmiðið í útflyttingi fyrirtækisins, 2 við þá sem er næst mikilvægast markmiðið og 3 við þá staðhæfingu sem þú telur þriðja mikilvægasta markmiðið.

Megin stefna fyrirtækisins í útflyttingi sjávarafurða er (að) ?

- a) Selja alltaf á hæstu mögulegum verðum.
- b) Selja hratt og fá greiðslur fljótt.
- c) Selja einungis það vorur.
- d) Halda uppi stöðugu voruframboði með því m.a. að halda lágmarks vorulager.
- e) Áreiðanleiki í voruafendingu.
- f) Selja eins nálægt endanlegum neytenda (notanda) vorunnar og mögulegt er.
- g) Byggja upp eigin vorumerki á erlendum markaðum.
- h) Byggja upp langtíma viðskipta-tengsl við erlenda kaupendur.
- i) Selja einungis til áreiðanlegra kaupenda.
- j) Annað. Hvað?

Þriðja spurning.

Vinsamlega merktu við fjóra af neðangreindum þáttum, eftir mikilvægi þeirra, með því að gefa þeim einkunnina frá 1 til 4. Þú merkir 1 við þann þátt sem þú telur að sé mesti styrkleiki fyrirtækisins í útflyttingu á sjávarafurðum, 2 við þann þátt sem þú telur næstmesta styrkleikann og 3 við þann þátt sem þú telur þriðja mesta styrkleikann og 4 við þann þátt sem þú telur fjórða mesta styrkleikann.

Hverja af neðangreindum þáttum telur þú vera helstu styrkleika fyrirtækisins í útflyttingu á sjávarafurðum?

- a) Gæði þeirrar vöru sem fyrirtækið selur.
- b) Innra greiðkerfi fyrirtækisins.
- c) Formleg tengsl (samningar) við innlenda framleiðendur.
- d) Skjót viðbrögð við breyttum aðstæðum á innlendum og erlendum markaðum.
- e) Dreifikerfi fyrirtækisins á erlendum markaðum.
- f) Ímynd eigin vörumerkis fyrirtækisins.
- g) Áreiðanleiki og persónulegt traust sem fyrirtækið hefur byggt upp gagnvart sínum viðskiptaáðilum.
- h) Þekking og reynsla starfsfólks fyrirtækisins á markaðs- og útflyttingssvarfsemi.
- i) Að vera sérhæft útflyttingsfyrirtæki.
- j) Að framleiða sjálf þær vorur er fyrirtækið flytur úr.
- k) Að vera þátttakandi í fyrirtækjaneti er selur alurðir sínar vinsamlega, í gegnum sérstök útflyttingsfyrirtæki í sameiginlega eign. (S.H., SIF, IS, Sjúðarutvegsnefnd)
- j) Annað. Hvað?

Fjórða spurning.

Vinsamlega merktu við fjóra af neðangreindum þáttum, eftir mikilvægi þeirra, með því að gefa þeim einkunnina frá 1 til 4. Þú merkir 1 við þann þátt sem þú telur að sé mesti veikleiki fyrirtækisins í útflutningi á sjávarafurðum, 2 við þann þátt sem þú telur næstmesta veikleikann, 3 við þann þátt sem þú telur þriðja mesta veikleikann og 4 við þann þátt sem þú telur fjórða mesta veikleikann.

Hverja af neðangreindum þáttum telur þú vera helstu veikleika fyrirtækisins í útflutningi á sjávarafurðum?

- a) Óformleg tengsl (ekki formlegir samningar) við framleiðendur.
- b) Hlutfallsleg smæð fyrirtækisins.
- c) Ónógur fjárhagslegur styrkleiki.
- d) Að vera sérhæft útflutningsfyrirtæki (umsýslufyrirtæki)
- e) Of lítil þekking meðal starfsmanna fyrirtækisins á markaðs- og útflutningsstarfsemi.
- f) Of mikil einhæfni í útflutningi, þ.e. of sérhæft í ákveðnum tegundum sjávarafurða.
- g) Eignarhaldsform.
- h) Upplýsingaflæði við aðra aðila í framleiðslu og útflutningskeðjunni, svo sem framleiðendur.
- i) Of mikil áhersla á fáa útflutningsmarkaði.
- j) Of mikið bundið fáum erlendum kaupendum.
- k) Annað. Hvað?.....

Að lokum þá þakka ég þér kærlega fyrir samvinnuna við framkvæmd þessarar rannsóknar og fyrir að hafa gefið þér tíma í að svara þessum spurningum.

Appendix 2.1.

Total population in Iceland 1971 - 1990

(Volume indices 1980 = 100)

Year	Population number	Year	Population number
1971	207,174	1981	231,958
1972	210,775	1982	235,453
1973	213,499	1983	238,175
1974	216,628	1984	240,122
1975	219,033	1985	241,750
1976	220,918	1986	243,698
1977	222,470	1987	247,027
1978	224,384	1988	251,743
1979	226,724	1989	253,482
1980	229,187	1990	255,855

Source:

Tölfræðihandbókin 1984, Hagstofa Íslands.

Hagtfðindi, (numerous issues), Hagstofa Íslands.

Appendix 2.2.

**Percentage breakdown of gross fixed capital
formation by kind of activity, 1971- 1990**

Year	Hotels etc	Industries	Fishing	Fish processing	Residential construction	Public works and Buildings
1971	4.3	52.3	4.6	3.3	16.6	31.0
1972	4.8	47.0	9.7	4.1	21.3	31.7
1973	4.3	45.7	16.0	4.4	26.6	27.7
1974	6.0	45.9	10.8	4.2	22.4	31.7
1975	4.6	40.6	7.7	4.1	21.2	38.3
1976	5.1	35.7	4.5	3.3	21.7	42.6
1977	4.6	42.8	9.5	4.6	21.4	35.9
1978	5.5	43.3	6.9	4.1	24.3	32.4
1979	4.8	41.2	7.4	4.7	26.2	32.7
1980	4.5	39.9	5.5	3.8	24.5	35.5
1981	5.2	40.4	6.3	3.7	22.2	37.4
1982	6.6	40.8	5.6	3.9	24.3	34.9
1983	7.7	41.7	5.5	3.7	24.7	33.6
1984	6.9	43.4	4.6	4.4	25.7	30.9
1985	7.9	50.0	3.7	4.6	22.0	28.0
1986	8.8	54.2	8.9	4.6	19.4	26.4
1987	11.6	54.0	10.2	3.5	18.9	27.1
1988	8.7	49.9	12.1	3.1	21.0	29.1
1989	8.6	45.3	6.2	2.3	22.9	33.2
1990	7.0	46.5	6.7	6.7	23.2	32.7

Source:

Tölfræðihandbókin 1984, Hagstofa Íslands.

Hagtfðindi, (numerous issues), Hagstofa Íslands.

Appendix 2.3.

**Average unemployment as a percentage of
total labour force, 1971-1990**

Year	Iceland	OECD Europe	OECD Total
1971	0.6	2.9	3.6
1972	0.5	3.1	3.7
1973	0.4	3.0	3.3
1974	0.4	3.3	3.5
1975	0.5	4.5	5.2
1976	0.5	4.9	5.3
1977	0.3	5.2	5.3
1978	0.4	5.4	5.2
1979	0.4	5.7	5.1
1980	0.3	6.5	5.8
1981	0.4	7.9	6.6
1982	0.7	9.2	8.1
1983	1.0	10.1	8.5
1984	1.3	10.5	8.0
1985	0.9	10.6	7.8
1986	0.7	10.5	7.7
1987	0.5	10.1	7.3
1988	0.7	9.3	6.9
1989	1.6	8.5	6.4
1990	1.7	8.0	6.2
Mean 70-90	0.69	6.96	5.98
St.Dev. 70-90	0.41	2.82	1.65

Source:

Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, 1991

Tölfræðihandbókin 1984, Hagstofa Íslands .

Hagtíðindi, 1988-1991, Hagstofa Íslands

OECD Economic Outlook 48, December 1990.

OECD Economic Outlook 49, July 1991.

Appendix 2.4.

**Private consumption expenditure,
Government consumption expenditure,
Gross domestic product.
Volume indices.**

**Volume indices
(1980 = 100)**

	1970	1975	1980	1985	1990
Private consumption	54.98	72.53	100.00	143.46	126.70
Government consumption	50.95	80.79	100.00	143.95	156.20
Gross domestic product	53.49	72.60	100.00	127.44	123.10

Source

Sögulegt yfirlit hagtalna 1945-1988

Þjóðarbúskapurinn nr.11

National Economic Institute, February 1991.

The Icelandic Economy

Developments 1990 and outlook for 1991

National Economic Institute, May 1991

Appendix 2.5.

Export of goods and services 1970 - 1990
Volume indices (1985 = 100)

Year	Iceland	EEC	OECD Europe	OECD Total
1970	49.1	48.1	48.0	45.6
1971	45.0	51.7	51.4	48.4
1972	51.6	55.8	55.5	52.8
1973	56.1	61.7	61.3	58.8
1974	54.6	65.9	65.1	63.0
1975	56.0	63.6	62.6	61.3
1976	63.3	69.5	68.5	66.7
1977	68.9	73.4	72.3	70.3
1978	79.4	76.8	75.9	74.3
1979	84.4	81.7	80.6	79.1
1980	86.7	82.6	81.8	83.0
1981	87.8	85.9	85.2	86.4
1982	79.3	86.8	86.3	85.6
1983	87.5	89.0	88.9	87.6
1984	90.1	95.6	95.4	95.7
1985	100.0	100.0	100.0	100.0
1986	106.2	101.8	101.7	103.0
1987	110.5	105.7	105.5	109.0
1988	107.4	111.5	111.5	118.3
1989	108.8	120.2	120.0	128.8
1990	0.0	0.0	0.0	0.0

Source:

National Accounts, Main Aggregates, Volume 1, 1960-1989

Appendix 3.1.

Ten principal exporters of fishery commodities in the world 1970-1988

(Million of US\$, ranked by 1988 values and % of world export in value)

Country \ Year	1970	%	1975	%	1980	%	1985	%	1988	%
Total world export	3,002.8	100.0%	6,460.3	100.0%	15,330.1	100.0%	17,382.5	100.0%	32,258.9	100.0%
United States	111.9	3.7%	298.0	4.6%	1,001.7	6.5%	1,162.4	6.7%	2,441.2	7.6%
Canada	257.3	8.6%	441.9	6.8%	1,094.5	7.1%	1,359.2	7.8%	2,206.4	6.8%
Denmark	165.6	5.5%	426.8	6.6%	999.5	6.5%	952.7	5.5%	1,854.5	5.7%
Rep. of Korea	42.0	1.4%	361.1	5.6%	681.8	4.4%	796.9	4.6%	1,784.1	5.5%
Taiwan	67.9	2.3%	254.4	3.9%	557.5	3.6%	956.5	5.5%	1,751.5	5.4%
Thailand	17.7	0.6%	102.7	1.6%	358.3	2.3%	675.1	3.9%	1,630.9	5.1%
Norway	260.0	8.7%	515.4	8.0%	974.7	6.4%	922.5	5.3%	1,608.1	5.0%
China	52.7	1.8%	146.2	2.3%	348.4	2.3%	366.9	2.1%	1,362.3	4.2%
Iceland	112.9	3.8%	243.5	3.8%	708.6	4.6%	617.4	3.6%	1,059.4	3.3%
Japan	335.5	11.2%	490.5	7.6%	905.2	5.9%	819.8	4.7%	1,037.3	3.2%
Total, ten principle	1,423.5	47.4%	3,280.5	50.8%	7,630.2	49.8%	8,629.4	49.6%	16,735.7	51.9%

Source

UNCTAD, Commodity Yearbook 1990, United Nations, 1991

Appendix 3.2.

Transfer of quotas between vessels, 1984-92

As a percentage of total catch 1)

Transfer 2)	1984	1985	1986	1987	1988	1989	1990	1991 3)	1991/92 4)
Type A	4.15	3.28	2.62	1.75	3.89	4.98	4.51	12.08	
Type B	3.83	3.36	2.17	1.84	3.03	3.62	2.97	8.99	
Type C	1.08	1.71	1.05	0.11	2.37	2.64	1.39	4.27	
Type D	3.58	5.8	2.65	2.21	4.54	4.31	5.64	7.64	
Total	12.64	14.15	8.49	5.9	13.82	15.55	14.51	32.97	45

1) Quotas are measured in kilograms of cod equivalents and represents both temporary and permanent quota transfers.

2) Type A: Transfers between vessels with the same owner.

Type B: Transfers between vessels with different owners operated from the same port

Type C: Offsetting transfers of equal value between vessels with different owners.

Type D: Transfers between vessels with different owners operated from different ports.

3) First eight months of 1991.

4) September to August fisheries year.

Source

Ministry of Fisheries.

Appendix 3.3.

Profitability of the fishery and processing sectors, 1983-1992

Per cent of gross income.

Net profits 1)	1983	1984	1985	1986	1987	1988	1989	1990	1991	Sept.1992
Fishery, total	-9.3	-9.4	-3.8	2.1	1.3	-1.5	-1.8	3.4	8.7	-3.3
Trawlers less than 500 GRT	-11.3	-10.5	-3.9	4.1	5.3	3.6	-2.0	2.6	1.4	-5.9
Trawlers larger than 500 GRT	-11.2	-6.7	-1.1	4.9	7.1	6.1	4.3	10.3	7.6	4.3
Boats	-6.5	-8.6	-4.3	-0.7	-4.1	-8.1	-5.5	-0.9	-1.4	-8.2
Freezer trawlers							4.9	11.2	15.4	5.7
Fish processing, total 2)	-0.4	-7.4	-2.6	3.9	3.6	-6.7	-5.6	1.7	2.7	-6.0
Freezing plants	1.6	-6.6	-3.5	0.4	0.5	-7.8	-1.7	3.9	4.1	-6.8
Saltfish processing (groundfish)	-6.5	-13.1	-0.1	10.9	8.7	-5.3	-11.7	-2.9	0.2	-4.6

1) Gross profits less imputed cost of capital, i.e. interest payments and depreciation.

2) With payments into the Price Equalisation Fund added to income and payments out of the Fund subtracted from income.

Source.

National Economic Institute.

Appendix 3.4.

The following tables shows the reduction in import tariffs for some of the principal species within the main marine product categories (based on custom tariff numbers) after the implementation of the EEA (Protocol 9) compared to what they remained according to Protocol 6 (1972) and the GATT (General Agreement on Tariffs and Trade)

0302. Whole, Fresh Fish

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Cod	15.0%	3.7%	0.0%	
Haddock	15.0%	3.7%	0.0%	
Saithe	15.0%	3.7%	0.0%	
Greenland halibut	8.0%	8.0%	0.0%	
Halibut	8.0%	8.0%	0.0%	
Redfish	8.0%	2.0%	1.7%	0.6%
Dogfishes	8.0%	8.0%	6.8%	2.4%
Other species	15.0%	15.0%	12.9%	4.5%

0303. Whole, Frozen Fish

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Cod	15.0%	3.7%	0.0%	
Haddock	15.0%	3.7%	0.0%	
Saithe	15.0%	3.7%	0.0%	
Greenland halibut	8.0%	8.0%	0.0%	
Halibut	8.0%	8.0%	0.0%	
Redfish	8.0%	2.0%	1.7%	0.6%
Dogfishes	8.0%	8.0%	6.8%	2.4%
Other species	15.0%	15.0%	12.9%	4.5%

0304.10 Fresh Fish Fillets

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Cod	18.0%	18.0%	0.0%	
Haddock	18.0%	18.0%	0.0%	
Saithe	18.0%	18.0%	0.0%	
Greenland halibut	18.0%	18.0%	0.0%	
Halibut	18.0%	18.0%	0.0%	
Other species	15.0%	18.0%	15.4%	5.4%

0304.20 Frozen Fish Fillets

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Cod	15.0%	0.0%		
Haddock	15.0%	0.0%		
Saithe	15.0%	0.0%		
Redfish	12.0%	0.0%		
Other species	15.0%	0.0%		

0305.30 Salted Fillets, and Dried

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Cod	20.0%	20.0%	0.0%	
Greenland halibut	15.0%	15.0%	12.9%	4.5%
Saithe	16.0%	16.0%	0.0%	
Herring	16.0%	16.0%	0.0%	
Other species	16.0%	16.0%	0.0%	

0305.50 Dried Fish; Salted and Dried

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Dried fish.				
Cod	13.0%	13.0%	0.0%	
Other species	12.0%	12.0%	10.3%	3.6%
Salted, dried.				
Cod	13.0%	13.0%	11.1%	3.9%
Other species	12.0%	12.0%	10.3%	3.6%

0305.60 Salted Fish

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Cod	13.0%	13.0%	0.0%	
Herring	12.0%	12.0%	12.0%	12.0%
Other species	12.0%	12.0%	10.3%	3.6%

0306. Crustaceans

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Shrimps	12.0%	0.0%		
Lobsters	12.0%	12.0%	12.0%	12.0%
King-crab	8.0%	8.0%	6.8%	2.4%
Other crab	15.0%	15.0%	12.9%	4.5%
Other species	12.0%	12.0%	10.3%	3.6%

0307. Molluscs and Other Invertebrates

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Scallop	8.0%	8.0%	6.8%	2.4%
Mussel	10.0%	10.0%	8.6%	3.0%
Squid	8.0%	8.0%	6.8%	2.4%
Starfish	11.0%	11.0%	9.4%	3.3%
Urchin	11.0%	11.0%	9.4%	3.3%
Quahog	11.0%	11.0%	9.4%	3.3%
Other	11.0%	11.0%	9.4%	3.3%

1604. Prepared or Preserved Fish.

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Raw, frozen fillets				
breaded.	15.0%	0.0%		
Herring	20.0%	10.0%	10.0%	10.0%
Saithe	20.0%	20.0%	17.2%	6.0%
Other	20.0%	10.0%	8.6%	3.0%
Caviar	30.0%	0.0%		

1605. Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved.

Species	GATT	Protocol 6	Protocol 9	
			1st year	4th year
Crab	8.0%	8.0%	6.8%	2.4%
Shrimp, in airtight containers	10.0%	10.0%	8.6%	3.0%
Shrimp, peeled	8.0%	8.0%	6.8%	2.4%
Lobster	11.0%	11.0%	9.4%	3.3%
Scallop	11.0%	11.0%	9.4%	3.3%
Mussel	11.0%	11.0%	9.4%	3.3%
Other	11.0%	11.0%	9.4%	3.3%

Source

Ministry of Fishery in Iceland

Appendix 3.5.

The Icelandic Fishing Fleet 1970-1990
(December each year)

Year	Fishing boats 0-12 GRT			Fishing boats 13-20 GRT			Fishing boats 21-50 GRT			Fishing boats 51-110 GRT		
	Number	Total tonnage	Average age	Number	Total tonnage	Average age	Number	Total tonnage	Average age	Number	Total tonnage	Average age
1970	207	1,729	15	59	954	24	116	4,054	23	206	15,227	16
1975	237	2,356	14	69	1,137	19	134	4,619	19	191	14,395	18
1980	266	2,285	16	67	1,090	20	113	3,795	19	159	12,235	22
1985	250	2,066	17	54	889	19	98	3,207	21	133	10,233	25
1990	445	3,615	11	50	836	19	82	2,598	22	115	8,982	25

Year	Fishing boats 111-200 GRT			Fishing boats 201- < GRT			Travlers 0 - 500 GRT			Travlers 500 - < GRT		
	Number	Total tonnage	Average age	Number	Total tonnage	Average age	Number	Total tonnage	Average age	Number	Total tonnage	Average age
1970	70	11,866	9	93	25,006	6	3	1,041	3	22	16,183	19
1975	97	15,191	11	88	25,010	10	42	16,482	3	22	18,193	8
1980	95	14,571	15	88	29,329	14	70	28,734	6	16	13,183	8
1985	100	15,571	18	84	27,490	18	87	34,724	10	20	16,439	14
1990	99	15,347	20	93	33,166	20	80	30,788	13	33	24,824	14

Sources

Útvegur 1990, Fiskifélag Íslands, July 1991

Appendix 3.6.

Nominal catch of demersal species (in tonnes) from Iceland's grounds 1930-1991

Year	Cod		Haddock		Haddock		Saithe		Saithe		Redfish		Redfish		Total		Total	Foreigners share in total demersal catch
	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Demersal	Others	Demersal	Others		
1930	261,278	237,157	10,863	38,529	13,124	29,337					13,678		285,265	318,701	603,966	52.77%		
1931	224,504	258,898	7,118	33,075	4,779	25,223					16,233		236,401	333,429	569,830	58.51%		
1932	208,081	277,207	4,933	27,004	6,838	28,244			357		13,364		220,209	345,819	566,028	61.10%		
1933	247,329	270,946	4,683	21,016	4,438	28,379			15		12,615		256,465	332,956	589,421	56.49%		
1934	223,729	214,840	5,937	20,362	7,090	34,216			607		11,014		237,363	280,432	517,795	54.16%		
1935	182,926	218,965	6,313	20,425	5,628	37,938			4,002		20,313		198,869	297,641	496,510	59.95%		
1936	102,354	181,232	4,205	20,282	7,311	44,446			23,053		34,581		136,923	280,541	417,464	67.20%		
1937	111,285	186,531	4,053	20,767	6,929	42,783			12,150		33,236		134,417	283,317	417,734	67.82%		
1938	131,965	179,351	4,609	20,339	6,816	50,459			13,791		51,004		157,181	301,153	458,334	65.71%		
1939	136,782	61,569	6,709	6,523	11,417	21,096			3,519		37,691		158,427	126,879	285,306	44.47%		
1940	147,347		19,476	322	6,261	54			1,543				174,627	376	175,003	0.21%		
1941	156,242		14,464	1,031	15,499	138			662				186,867	1,169	188,036	0.62%		
1942	173,146		15,020	1,709	29,492	262			974				218,632	1,971	220,603	0.89%		
1943	186,017		11,956	1,512	33,961	321			3,703				235,637	1,833	237,470	0.77%		
1944	216,677		10,546	1,886	56,016	353			7,283				290,522	2,239	292,761	0.76%		
1945	211,849		12,104	1,665	26,650	556			10,286		719		260,889	7,038	267,927	2.63%		
1946	199,165		14,120	14,233	23,792	16,173			4,245		3,270		241,322	72,398	313,720	23.08%		
1947	200,242		18,601	14,383	32,587	7,648			8,226		1,989		259,656	69,975	329,631	21.23%		
1948	213,177		24,862	27,043	79,634	29,106			25,120		8,782		342,793	145,088	487,881	29.74%		
1949	221,419		30,264	36,273	48,309	36,446			33,510		27,598		333,502	193,452	526,954	36.71%		
1950	197,433		27,099	33,274	7,471	45,686			72,897		53,010		304,900	255,987	560,887	45.64%		

Year	Cod		Haddock		Saithe		Redfish		Total		Total		Total Demersal Others	Total Demersal	Foreigners share in total demersal catch
	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Demersal	Iceland	Demersal	Iceland			
1951	183,252	143,687	22,173	32,178	19,094	55,000	97,213	69,288	321,732	300,153	621,885	48.27%			
1952	237,314	154,616	15,166	29,786	31,639	56,682	44,243	82,364	328,362	323,448	651,810	49.62%			
1953	263,516	251,695	14,954	38,341	30,382	42,776	32,894	124,594	341,746	457,406	799,152	57.24%			
1954	306,191	240,061	21,324	40,732	16,470	53,182	28,850	112,274	372,835	446,249	819,084	54.48%			
1955	315,438	221,329	21,703	42,638	12,298	35,545	32,724	77,545	382,163	377,057	759,220	49.66%			
1956	292,586	189,578	22,054	39,844	25,250	42,611	33,713	59,186	373,603	331,219	704,822	46.99%			
1957	247,087	205,949	31,302	45,111	19,055	43,007	27,914	56,208	325,358	350,275	675,633	51.84%			
1958	284,407	226,107	28,624	41,528	14,961	38,219	20,439	70,058	348,431	375,912	724,343	51.90%			
1959	284,259	169,966	26,534	37,165	14,975	33,504	19,915	62,429	345,683	303,064	648,747	46.72%			
1960	295,668	169,355	41,988	44,439	12,703	35,343	20,356	62,205	370,715	311,342	682,057	45.65%			
1961	233,874	141,753	51,360	56,984	13,675	36,155	15,345	53,477	314,254	288,369	602,623	47.85%			
1962	221,820	164,602	54,288	64,315	13,469	36,940	13,185	62,092	302,762	327,949	630,711	52.00%			
1963	232,839	176,537	51,834	50,728	14,758	33,691	22,803	67,329	322,234	328,285	650,519	50.47%			
1964	273,584	160,926	56,586	42,661	21,665	38,752	18,096	77,064	369,931	319,403	689,334	46.34%			
1965	233,483	160,069	53,506	45,620	24,866	35,242	23,663	90,163	335,518	331,094	666,612	49.67%			
1966	223,974	133,423	36,028	24,113	21,022	31,154	16,607	90,020	297,631	278,710	576,341	48.36%			
1967	193,449	150,524	37,997	22,485	29,021	47,249	17,857	76,885	278,324	297,143	575,467	51.64%			
1968	227,594	151,863	34,014	17,213	38,027	39,919	24,716	71,340	324,351	280,335	604,686	46.36%			
1969	281,680	123,488	35,026	11,573	53,988	62,359	24,321	62,759	395,015	260,179	655,194	39.71%			
1970	302,875	167,882	31,833	12,655	63,882	49,433	23,807	54,328	422,397	284,298	706,695	40.23%			
1971	250,324	202,679	32,376	13,731	60,080	73,811	29,118	53,017	371,898	343,238	715,136	48.00%			
1972	225,354	173,174	29,252	10,018	59,945	47,928	26,973	50,217	341,524	281,337	622,861	45.17%			
1973	238,898	144,701	34,586	11,117	56,567	54,546	26,470	43,180	356,521	253,544	610,065	41.56%			
1974	238,066	136,704	34,199	8,225	65,220	32,348	27,816	41,329	365,301	218,606	583,907	37.44%			
1975	264,975	106,016	36,658	9,045	61,430	26,494	32,659	38,075	395,722	179,630	575,352	31.22%			
1976	280,831	67,532	34,870	7,497	56,811	25,134	34,028	35,805	406,540	135,968	542,508	25.06%			
1977	329,676	10,377	35,428	4,230	46,973	15,053	28,119	33,406	440,196	63,066	503,262	12.53%			
1978	319,648	8,572	40,552	2,936	44,327	5,345	33,318	1,884	437,845	18,737	456,582	4.10%			
1979	360,080	7,936	52,152	3,182	57,066	6,438	62,253	2,057	531,551	19,613	551,164	3.56%			
1980	428,344	6,000	47,916	3,196	52,436	5,911	69,780	2,469	598,476	17,576	616,052	2.85%			

Year	Cod		Haddock		Saithe		Redfish		Total		Total Demersal	Total Demersal Others	Total Demersal Iceland	Redfish Other Nations	Total Demersal Iceland	Total Demersal Others	Total Demersal	Foreigners share in total demersal catch
	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Iceland	Other Nations	Demersal	Others								
1981	460,579	8,063	61,033	2,527	54,921	4,080	93,349	2,168	669,882	16,838	686,720		669,882	2,168	669,882	16,838	686,720	2.45%
1982	382,297	6,090	67,038	2,387	65,124	3,786	115,051	1,340	629,510	13,603	643,113		629,510	1,340	629,510	13,603	643,113	2.12%
1983	293,890	5,923	63,889	2,054	55,904	2,362	122,749	1,778	536,432	12,117	548,549		536,432	1,778	536,432	12,117	548,549	2.21%
1984	281,481	2,385	47,216	1,069	60,406	2,313	108,270	989	497,373	6,756	504,129		497,373	989	497,373	6,756	504,129	1.34%
1985	322,810	2,456	49,553	1,378	55,135	1,937	91,381	699	518,879	6,470	525,349		518,879	699	518,879	6,470	525,349	1.23%
1986	365,859	2,781	47,317	1,546	63,867	1,001	85,992	569	563,035	5,897	568,932		563,035	569	563,035	5,897	568,932	1.04%
1987	389,809	2,449	39,479	1,282	78,175	2,356	87,768	737	595,231	6,824	602,055		595,231	737	595,231	6,824	602,055	1.13%
1988	375,754	2,243	53,085	1,117	74,383	2,842	94,011	368	597,233	6,570	603,803		597,233	368	597,233	6,570	603,803	1.09%
1989	354,002	2,324	61,890	1,089	79,810	2,615	91,488	585	587,190	6,613	593,803		587,190	585	587,190	6,613	593,803	1.11%
1990	332,729	2,040	66,004	1,196	95,032	3,093	90,891	693	584,656	7,022	591,678		584,656	693	584,656	7,022	591,678	1.19%
1991	306,694	1,887	53,515	1,217	99,322	2,911	96,772	558	556,303	6,573	562,876		556,303	558	556,303	6,573	562,876	1.17%

Appendix 3.7.

Catches of main species by months in 1990
Percentage breakdown by quantity

	Cod	Haddock	Saithe	Redfish	Green- land halibut	Herring	Capelin	Scrimps	Lobsters	Scallops
January	7.0	3.9	3.3	4.7	1.7	2.5	28.4	3.7	0.0	12.4
February	8.9	7.0	6.4	7.4	2.7	0.0	40.9	4.8	0.2	11.6
March	14.2	6.7	12.1	8.4	1.9	0.0	18.0	4.4	0.1	4.9
April	12.3	13.9	10.5	10.6	10.7	0.0	0.6	6.1	0.2	1.1
May	9.7	15.3	8.9	7.4	42.2	0.0	0.0	10.6	40.8	1.9
June	6.2	8.8	9.8	5.6	29.1	0.0	0.0	13.6	29.8	0.0
July	11.6	9.2	7.0	9.0	3.9	0.0	0.0	21.0	22.6	0.0
August	7.1	9.3	10.4	8.0	1.2	0.0	0.0	11.9	5.4	8.4
September	5.3	5.2	9.2	9.9	1.9	0.0	0.0	7.4	0.2	15.8
October	4.6	7.1	11.2	13.6	1.7	22.5	3.3	6.4	0.3	20.9
November	6.6	8.1	6.7	10.2	1.8	56.0	8.0	6.5	0.3	17.1
December	6.5	5.5	4.5	5.2	1.2	19.0	0.8	3.6	0.1	5.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
St.Dev.	3.02	3.37	2.74	2.55	13.32	16.99	13.64	5.14	14.33	7.19

Source
Útvegur 1990.

Appendix 3.8.

Icelandic landings of main species by regions ¹⁾

Percentage average 1981 - 1990

	South	South	West	West	North	North	East	Foreign	Total
		West		fjord	West	East		Ports	
Cod	8.5	20.8	11.0	13.5	7.2	18.8	12.0	8.2	100.0
St.Dev.	2.0	2.9	1.1	1.7	1.2	1.1	1.0	3.9	
Haddock	16.9	28.2	6.5	5.7	2.9	6.9	12.7	20.2	100.0
St.Dev.	8.5	2.8	1.9	1.9	0.8	2.3	2.3	12.4	
Saithe	25.4	30.6	5.1	5.4	2.9	9.2	11.4	10.1	100.0
St.Dev.	4.5	3.0	0.7	1.1	0.8	2.5	1.3	3.5	
Redfish	9.2	38.3	10.3	6.3	2.5	10.9	4.1	18.4	100.0
St.Dev.	1.3	6.6	1.1	1.5	0.8	2.0	1.1	7.4	
Greenland									
halibut	2.5	18.8	5.0	23.6	12.2	22.3	6.7	8.6	100.0
St.Dev.	0.8	5.3	1.1	9.3	1.2	1.8	3.9	3.3	
Halibut	9.2	31.5	10.4	10.3	2.4	6.2	7.1	22.9	100.0
St.Dev.	3.7	6.6	4.5	4.1	0.6	1.6	2.3	12.4	
Catfish	7.2	11.8	3.4	42.3	2.0	8.1	14.4	10.8	100.0
St.Dev.	1.4	3.1	1.4	5.9	0.7	2.1	3.3	4.9	
Plaice	8.5	25.7	8.8	8.0	2.2	11.0	2.8	33.0	100.0
St.Dev.	4.7	4.5	4.5	4.8	1.1	2.9	1.0	19.4	
Herring	17.9	19.6	3.0	0.1	0.4	4.4	54.5	0.1	100.0
St.Dev.	4.7	5.4	0.9	0.1	0.4	1.8	10.6	0.2	
Capelin	15.6	10.0	3.5	2.8	10.9	14.2	39.2	3.8	100.0
St.Dev.	9.2	3.8	1.6	1.5	5.4	6.9	5.8	3.0	
Lobster	37.4	28.4	0.2	0.0	0.0	0.0	34.0	0.0	100.0
St.Dev.	5.2	4.4	0.3	0.0	0.0	0.0	5.4	0.0	
Shrimps	0.6	12.9	5.4	34.3	29.8	15.0	2.1	0.0	100.0
St.Dev.	0.7	3.3	1.6	7.7	5.9	6.8	1.4	0.0	
Scallop	0.0	1.0	76.4	14.3	7.7	0.6	0.0	0.0	100.0
St.Dev.	0.0	1.6	8.0	2.8	5.9	1.3	0.0	0.0	

¹⁾ Landings of Icelandic Vessels by regions as a percentage average of total landings (quantity) by Icelandic Vessels

Source

Calculated from Útvegur 1990.

Appendix 3.9.

Utilization of the fish catch by months
(Percentage breakdown by months. Average 1989 - 1991)

	J	F	M	A	M	J	J	A	S	O	N	D
Land Frozen	4.0	7.0	11.0	9.0	10.0	9.0	10.0	7.0	7.0	9.0	11.0	6.0
St.Dev. 89-91	0.42	0.21	3.18	0.59	0.29	0.21	1.04	0.00	0.31	0.71	1.06	0.07
Frozen at sea	4.0	4.0	8.0	11.0	12.0	10.0	11.0	10.0	7.0	8.0	8.0	7.0
St.Dev. 89-91	0.51	1.20	0.24	0.15	1.77	1.83	2.18	1.45	0.78	1.25	1.21	0.07
Salted	5.0	9.0	18.0	15.0	9.0	5.0	6.0	4.0	3.0	7.0	12.0	7.0
St.Dev. 89-91	0.50	0.46	0.44	1.70	3.01	1.09	1.81	0.26	0.38	0.44	2.10	1.31
Dried	2.0	2.0	4.0	37.0	51.0	1.0	0.0	0.0	1.0	1.0	1.0	1.0
St.Dev. 89-91	1.03	0.10	1.13	29.48	28.74	0.65	0.02	0.17	0.26	0.21	0.81	0.32
Meal & Oil	26.0	32.0	24.0	3.0	0.0	0.0	0.0	0.0	0.0	3.0	10.0	3.0
St.Dev. 89-91	1.89	7.14	8.19	3.19	0.03	0.16	0.02	0.15	0.10	2.38	1.91	1.47
Landed in foreign ports	22.0	24.0	11.0	8.0	6.0	3.0	4.0	5.0	4.0	5.0	5.0	3.0
St.Dev.89-91	9.01	13.34	7.02	0.26	0.36	0.99	0.00	0.84	0.54	0.70	0.85	0.26
On ice in containers	5.0	8.0	10.0	10.0	10.0	7.0	8.0	9.0	7.0	10.0	11.0	7.0
St.Dev.89-91	1.44	1.68	2.48	0.83	2.76	0.15	0.94	1.55	0.58	0.05	1.41	0.12
Domestic consumption	8.0	9.0	9.0	10.0	9.0	8.0	8.0	7.0	7.0	8.0	9.0	7.0
St.Dev.89-91	0.46	0.12	1.29	0.63	0.86	0.03	0.51	0.00	0.24	0.03	1.56	0.36
Canned	5.0	17.0	9.0	9.0	7.0	3.0	1.0	2.0	7.0	14.0	18.0	8.0
St.Dev.89-91	0.89	11.84	7.94	2.61	2.78	3.25	1.90	2.34	7.17	6.77	1.12	1.72
On ice by airplanes	7.0	10.0	11.0	11.0	9.0	5.0	5.0	5.0	6.0	9.0	12.0	10.0
St.Dev.89-91	0.44	2.17	3.00	1.18	4.00	1.45	2.84	3.18	0.68	1.47	0.31	0.03

Source

Calculated from Útvegur 1990.

Appendix 3.10a.

Export volume of marine products by product categories, 1972 - 1991

Year	Frozen tonnes	Frozen % share	Salted tonnes	Salted % share	Iced tonnes	Iced % share	Dried tonnes	Dried % share	Meal & Oil tonnes	Meal & Oil % share	Canned tonnes	Canned % share	Other tonnes	Other % share	Total tonnes
1972	90,053	31.95%	39,777	14.11%	54,706	19.41%	3,475	1.23%	92,242	32.73%	1,361	0.48%	235	0.08%	281,849
1973	95,311	29.25%	40,006	12.28%	60,712	18.63%	1,683	0.52%	125,530	38.52%	1,751	0.54%	883	0.27%	325,876
1974	89,938	29.49%	43,027	14.11%	56,117	18.40%	1,197	0.39%	111,495	36.56%	1,621	0.53%	1,570	0.51%	304,965
1975	96,729	26.23%	49,089	13.31%	77,676	21.06%	1,805	0.49%	142,269	38.58%	1,094	0.30%	93	0.03%	368,755
1976	98,015	29.76%	64,281	19.52%	32,169	9.77%	2,008	0.61%	131,083	39.81%	963	0.29%	783	0.24%	329,302
1977	106,642	26.66%	52,342	13.09%	15,920	3.98%	3,088	0.77%	219,016	54.76%	1,760	0.44%	1,171	0.29%	399,939
1978	123,295	25.22%	60,153	12.30%	25,801	5.28%	6,899	1.41%	269,841	55.19%	1,816	0.37%	1,165	0.24%	488,970
1979	146,304	25.86%	69,905	12.35%	44,523	7.87%	3,280	0.58%	298,098	52.68%	1,832	0.32%	1,881	0.33%	565,823
1980	144,223	26.22%	75,810	13.78%	58,202	10.58%	12,625	2.29%	253,161	46.02%	1,939	0.35%	4,153	0.75%	550,113
1981	133,237	26.90%	82,371	16.63%	35,134	7.09%	18,988	3.83%	213,675	43.15%	1,740	0.35%	10,075	2.03%	495,220
1982	131,562	35.78%	79,627	21.66%	38,341	10.43%	4,270	1.16%	102,461	27.86%	2,431	0.66%	9,015	2.45%	367,707
1983	145,588	43.41%	71,495	21.32%	44,021	13.12%	6,463	1.93%	51,540	15.37%	2,867	0.85%	13,443	4.01%	335,417
1984	146,295	29.91%	70,729	14.46%	67,735	13.85%	1,306	0.27%	194,903	39.85%	3,391	0.69%	4,760	0.97%	489,119
1985	156,063	22.36%	77,992	11.17%	165,075	23.65%	1,103	0.16%	287,620	41.21%	3,773	0.54%	6,388	0.92%	698,014
1986	167,980	23.37%	77,710	10.81%	152,968	21.28%	7,167	1.00%	292,464	40.69%	3,807	0.53%	16,631	2.31%	718,727
1987	177,090	27.57%	89,847	13.99%	119,641	18.63%	7,282	1.13%	232,758	36.24%	3,942	0.61%	11,660	1.82%	642,220
1988	159,176	22.95%	90,803	13.09%	151,963	21.91%	3,517	0.51%	276,816	39.92%	3,805	0.55%	7,403	1.07%	693,483
1989	190,474	29.18%	79,761	12.22%	176,763	27.08%	4,731	0.72%	185,880	28.48%	3,560	0.55%	11,600	1.78%	652,769
1990	190,766	30.60%	76,343	12.25%	139,950	22.45%	6,594	1.06%	199,090	31.94%	3,859	0.62%	6,751	1.08%	623,353
1991	193,970	41.13%	61,929	13.13%	95,667	20.28%	6,386	1.35%	99,624	21.12%	2,576	0.55%	11,494	2.44%	471,646
Mean 72-81	112,375	27.75%	57,676	14.15%	46,096	12.21%	5,505	1.21%	185,641	43.80%	1,588	0.40%	2,201	0.48%	411,081
St.Dev.72-81	22,352	2.20%	15,229	2.29%	18,771	6.49%	5,854	1.09%	73,701	8.03%	334	0.09%	2,991	0.58%	105,539
Mean 82-91	165,896	30.63%	77,624	14.41%	115,212	19.27%	4,882	0.93%	192,316	32.27%	3,401	0.62%	9,915	1.88%	569,246
St.Dev.82-91	21,750	7.39%	8,595	3.90%	50,877	5.25%	2,309	0.53%	84,634	8.98%	568	0.10%	3,683	0.97%	141,747

Source

Utvegur various issues, Fiskifelag Islands

Appendix 3.10b.

Export value of marine products by product categories 1972-1991

in millions of SDR

Year	ISK		SDR		%		ISK		SDR		%		ISK		SDR		%	
	Frozen	Frozen	Frozen	Frozen	Salted	Salted	Iced	Iced	Iced	Iced	Dried	Dried	Dried	Dried	Meal & Oil	Meal & Oil	Meal & Oil	Meal & Oil
1972	70	73.63	56.72%	24	25.31	19.49%	9	9.88	7.61%	3	3.08	2.37%	14	14.97	11.53%			
1973	92	54.53	48.02%	33	19.71	17.36%	16	9.46	8.33%	3	2.03	1.79%	44	25.76	22.68%			
1974	109	90.56	44.24%	65	54.33	26.54%	18	15.03	7.34%	4	3.52	1.72%	44	36.37	17.77%			
1975	183	211.18	48.92%	107	123.78	28.67%	15	16.85	3.90%	9	10.38	2.40%	55	63.46	14.70%			
1976	264	125.54	49.40%	154	73.34	28.86%	20	9.36	3.68%	15	7.21	2.84%	74	35.28	13.88%			
1977	388	167.01	50.78%	143	61.73	18.77%	13	5.77	1.75%	24	10.41	3.16%	181	77.95	23.70%			
1978	676	198.87	49.46%	236	69.34	17.25%	56	16.53	4.11%	74	21.81	5.42%	301	88.65	22.05%			
1979	1,104	242.77	52.33%	405	88.94	19.17%	116	25.60	5.52%	51	11.13	2.40%	395	86.80	18.71%			
1980	1,512	242.67	44.62%	710	113.98	20.96%	218	34.95	6.42%	335	53.83	9.90%	528	84.73	15.58%			
1981	2,064	242.45	39.84%	1,274	149.64	24.59%	199	23.41	3.85%	813	95.50	15.69%	666	78.22	12.85%			
1982	3,337	243.37	51.28%	1,851	134.99	28.44%	391	28.49	6.00%	315	22.98	4.84%	382	27.84	5.87%			
1983	7,701	289.57	59.02%	2,755	103.60	21.12%	743	27.93	5.69%	742	27.88	5.68%	466	17.53	3.57%			
1984	9,132	282.03	55.91%	3,252	100.43	19.91%	1,079	33.32	6.61%	92	2.84	0.56%	2,231	68.92	13.66%			
1985	14,102	334.29	54.36%	4,816	114.16	18.57%	2,600	61.63	10.02%	184	4.35	0.71%	3,498	82.92	13.49%			
1986	18,827	390.79	53.08%	6,878	142.76	19.39%	4,038	83.81	11.38%	900	18.69	2.54%	3,709	76.99	10.46%			
1987	21,119	423.06	50.97%	10,004	200.40	24.14%	4,959	99.33	11.97%	1,082	21.68	2.61%	2,976	59.62	7.18%			
1988	21,272	368.18	47.10%	10,551	182.62	23.36%	6,082	105.27	13.47%	717	12.42	1.59%	5,050	87.41	11.18%			
1989	29,454	402.81	50.52%	11,556	158.04	19.82%	9,195	125.75	15.77%	1,252	17.13	2.15%	4,932	67.45	8.46%			
1990	37,864	479.26	52.33%	14,151	179.12	19.56%	11,987	151.72	16.57%	1,245	15.76	1.72%	5,124	64.86	7.08%			
1991	44,026	545.50	58.68%	15,061	186.61	20.07%	10,369	128.48	13.82%	964	11.94	1.28%	2,829	35.06	3.77%			
Mean72-91	10,665	270.40	50.88%	4,201	114.14	21.80%	2,606	50.63	8.19%	441	18.73	3.57%	1,675	59.04	12.91%			
S.D. 72-91	13,725	135.68	4.83%	5,199	53.25	3.80%	3,883	47.05	4.33%	466	21.63	3.57%	1,908	25.50	5.99%			
Mean82-91	20,683	375.89	53.33%	8,088	150.27	21.44%	5,144	84.57	11.13%	749	15.57	2.37%	3,120	58.86	8.47%			
S.D. 82-91	13,196	93.24	3.74%	4,831	36.56	3.04%	4,185	45.08	3.97%	424	7.94	1.68%	1,730	23.97	3.65%			

Source

Utvegur, various issues

Export value of marine products by product categories 1972-1991
in millions of SDR

Year	ISK		SDR		%		ISK		SDR		%		ISK Total
	Canned	2	Canned	3	Canned	5	Other	1	Other	1	Other	1	
1972	2	2.42	2.42	1.86%	1	0.53	0.41%	123					123
1973	3	1.74	1.74	1.53%	1	0.32	0.28%	192					192
1974	5	4.09	4.09	2.00%	1	0.82	0.40%	246					246
1975	5	5.38	5.38	1.25%	1	0.63	0.15%	373					373
1976	6	2.85	2.85	1.12%	1	0.56	0.22%	534					534
1977	13	5.41	5.41	1.64%	1	0.61	0.19%	763					763
1978	20	5.88	5.88	1.46%	3	0.96	0.24%	1,367					1,367
1979	31	6.71	6.71	1.45%	9	1.98	0.43%	2,110					2,110
1980	49	7.83	7.83	1.44%	37	5.93	1.09%	3,388					3,388
1981	64	7.47	7.47	1.23%	101	11.86	1.95%	5,179					5,179
1982	157	11.48	11.48	2.42%	75	5.45	1.15%	6,508					6,508
1983	381	14.33	14.33	2.92%	260	9.79	2.00%	13,049					13,049
1984	505	15.58	15.58	3.09%	41	1.27	0.25%	16,332					16,332
1985	713	16.91	16.91	2.75%	27	0.65	0.11%	25,940					25,940
1986	842	17.47	17.47	2.37%	279	5.78	0.79%	35,472					35,472
1987	1,113	22.30	22.30	2.69%	182	3.64	0.44%	41,435					41,435
1988	1,332	23.06	23.06	2.95%	154	2.66	0.34%	45,158					45,158
1989	1,494	20.43	20.43	2.56%	419	5.73	0.72%	58,303					58,303
1990	1,714	21.69	21.69	2.37%	265	3.36	0.37%	72,351					72,351
1991	1,340	16.60	16.60	1.79%	444	5.50	0.59%	75,032					75,032
Mean72-91	489	11.48	11.48	2.04%	115	3.40	0.60%						
S.D. 72-91	600	7.31	7.31	0.65%	145	3.30	0.55%						
Mean82-91	959	17.99	17.99	2.59%	215	4.38	0.67%						
S.D. 82-91	519	3.78	3.78	0.38%	146	2.66	0.55%						

Source

Utvegur, various issues

Appendix 3.11.

**Total export of marine products by the 5 "principal export organisations"
in 1982 - 1991, and their respective share in the
total export of marine products from Iceland.1)**

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Total exports of marine products 2)	6,508.20	13,048.60	16,331.60	25,939.60	35,417.70	41,435.20	45,158.40	58,302.50	72,351.10	75,031.90
Sölumíðstöð hraðfrystihúsanna	1,974.30	4,453.80	4,745.90	7,156.60	9,108.30	10,270.40	9,993.90	13,912.10	17,270.30	18,096.50
Sölusamband íslenskra fiskframleiðenda	1,577.60	2,202.80	2,290.30	3,717.20	5,782.60	8,622.20	9,036.10	9,772.70	11,439.30	12,595.00
Íslenskar sjávarafurðir 3)	1,103.00	2,544.60	3,096.90	4,772.30	6,502.00	6,919.20	6,476.40	9,208.20	10,559.30	12,093.10
Síðarútvegsnefnd	222.40	457.90	774.70	880.40	739.10	837.70	1,057.80	1,246.30	1,518.70	877.00
Sölusamtök lagmetis	134.20	349.70	434.40	592.80	674.30	903.70	1,130.50	1,162.60	1,300.20	779.00
Total exports by the 5 "principal export organizations"	5,011.50	10,008.80	11,342.20	17,119.30	22,806.30	27,553.20	27,694.70	35,301.90	42,087.80	44,440.60
Total share by the 5 "export organizations" in the exports of marine products	77.00%	76.70%	69.45%	66.00%	64.39%	66.50%	61.33%	60.55%	58.17%	59.23%
Sölumíðstöð hraðfrystihúsanna	30.34%	34.13%	29.06%	27.59%	25.72%	24.79%	22.13%	23.86%	23.87%	24.12%
Sölusamband íslenskra fiskframleiðenda	24.24%	16.88%	14.02%	14.33%	16.33%	20.81%	20.01%	16.76%	15.81%	16.79%
Íslenskar sjávarafurðir 3)	16.95%	19.50%	18.96%	18.40%	18.36%	16.70%	14.34%	15.79%	14.59%	16.12%
Síðarútvegsnefnd	3.42%	3.51%	4.74%	3.39%	2.09%	2.02%	2.34%	2.14%	2.10%	1.17%
Sölusamtök lagmetis	2.06%	2.68%	2.66%	2.29%	1.90%	2.18%	2.50%	1.99%	1.80%	1.04%

1. Millions of ISK (fob and at current exchange rate)

2. Exports of canned fish products and fish feeds are included

3. Íslenskar sjávarafurðir were previously SÍS

Source:

Útvegur 1990, Fiskifélag Íslands, July 1991

Hagfóndi, various issues, Hagstofa Íslands.

Samband Íslenskra Samvinnufélaga, Sjávarafurðadeild

Ársskýrsla 1989, 1990.

Appendix 3.12.

**Export value of marine products by market areas 1972-1991.
Percentage breakdown.**

Year	EFTA	EC	Other European Countries	America	Africa	Asia	Other
1972	26.00%	11.06%	17.83%	42.11%	1.38%	1.32%	0.31%
1973	10.92%	34.31%	14.20%	36.39%	0.19%	3.86%	0.14%
1974	19.00%	22.24%	22.45%	30.24%	0.44%	5.53%	0.10%
1975	18.75%	20.13%	20.75%	37.37%	1.79%	1.14%	0.07%
1976	19.79%	20.92%	15.11%	39.99%	1.87%	2.17%	0.16%
1977	12.82%	24.39%	17.62%	39.34%	3.24%	2.51%	0.08%
1978	9.91%	28.93%	14.69%	37.90%	5.18%	3.33%	0.06%
1979	10.91%	32.86%	14.31%	35.94%	1.50%	4.35%	0.12%
1980	11.84%	33.86%	14.33%	28.36%	9.73%	1.78%	0.10%
1981	16.61%	26.26%	13.22%	24.44%	17.24%	2.14%	0.09%
1982	18.27%	32.99%	9.55%	31.68%	4.78%	2.55%	0.18%
1983	11.41%	29.45%	11.28%	38.15%	7.09%	2.58%	0.04%
1984	10.67%	33.08%	16.06%	35.31%	0.37%	4.12%	0.38%
1985	12.16%	37.29%	12.92%	32.71%	0.28%	4.46%	0.20%
1986	6.63%	54.35%	6.56%	25.23%	2.39%	4.77%	0.07%
1987	4.51%	58.55%	5.40%	20.92%	2.00%	8.52%	0.09%
1988	5.04%	61.16%	6.93%	15.28%	1.53%	9.93%	0.12%
1989	5.19%	59.91%	6.25%	17.81%	0.79%	9.84%	0.20%
1990	4.13%	71.13%	4.04%	12.17%	0.89%	7.55%	0.09%
1991	3.02%	70.02%	1.02%	14.60%	0.91%	10.12%	0.31%

Source:

Calculated from Útvegur 1991, Fiskifélag Íslands.

Appendix 3.13.

**Export of whole fish on ice 1981-1991
in thousands of tonnes**

Year	U.K.	Germany	Other countries	Total
1981	13,528.4	12,551.5	8,129.0	34,208.9
1982	15,660.0	15,113.5	5,379.1	36,152.6
1983	17,852.3	20,955.7	3,208.4	42,016.4
1984	23,713.7	23,181.3	1,121.9	48,016.9
1985	45,271.4	21,040.9	1,749.3	68,061.6
1986	56,542.9	27,343.7	5,220.1	89,106.7
1987	62,105.2	27,963.6	9,447.5	99,516.3
1988	65,871.8	28,035.9	12,762.3	106,670.0
1989	64,909.2	35,553.5	11,170.5	111,633.2
1990	62,050.2	34,748.8	9,318.8	106,117.8
1991	46,226.1	33,302.7	9,370.1	88,898.9

Source:

Hagfíðindi, various issues, Hagstofa Íslands
Útvegur 1991, Fiskifélag Íslands

Appendix 3.14.

Export of frozen groundfish by type of products at 1982

(Thousands of tonnes and thousands of ISK)

	1982 tonnes	%	1982 value	%
Total production	116,843		2,933,220	
Flatfish whole-frozen	9,928	9.1%	110,743	4.0%
Redfish, whole-frozen	1,045	1.0%	10,051	0.4%
Ling, whole-frozen		0.0%		0.0%
Tusk, whole-frozen	9	0.0%	64	0.0%
Catfish, whole-frozen	241	0.2%	1,881	0.1%
Saithe, whole-frozen		0.0%	1	0.0%
Haddock, whole-frozen	27	0.0%	183	0.0%
Cod, whole-frozen	93	0.1%	736	0.0%
Other, whole-frozen	169	0.2%	5,897	0.2%
Flatfish, block-frozen	3,595	3.3%	73,066	2.7%
Flatfish, frozen fillets	2,423	2.2%	62,930	2.3%
Redfish, block-frozen	1,224	1.1%	22,726	0.8%
Redfish, frozen fillets	21,922	20.0%	457,306	16.6%
Ling, block-frozen	75	0.1%	1,337	0.0%
Ling, frozen fillets	376	0.3%	6,257	0.2%
Tusk, block-frozen		0.0%		0.0%
Tusk, frozen fillets	8	0.0%	134	0.0%
Catfish, block-frozen	566	0.5%	16,175	0.6%
Catfish, frozen fillets	1,280	1.2%	38,438	1.4%
Saithe, block-frozen	5,254	4.8%	99,749	3.6%
Saithe, frozen fillets	3,486	3.2%	76,664	2.8%
Haddock, block-frozen	5,937	5.4%	155,070	5.6%
Haddock, frozen fillets	7,419	6.8%	240,638	8.7%
Cod, block-frozen	11,835	10.8%	314,511	11.4%
Cod, frozen fillets	30,784	28.1%	1,043,190	37.9%
Other frozen; mince block or fillets	1,684	1.5%	17,376	0.6%
Total export	109,380	100.0%	2,755,123	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1983

(Thousands of tonnes and thousands of ISK)

	1983 tonnes	%	1983 value	%
Total production	124,060		6,117,519	
Flatfish whole-frozen	9,549	7.6%	187,139	3.0%
Redfish, whole-frozen	801	0.6%	15,635	0.3%
Ling, whole-frozen	45	0.0%	1,433	0.0%
Tusk, whole-frozen	93	0.1%	2,524	0.0%
Catfish, whole-frozen	392	0.3%	6,443	0.1%
Saithe, whole-frozen	205	0.2%	3,408	0.1%
Haddock, whole-frozen	110	0.1%	3,512	0.1%
Cod, whole-frozen	251	0.2%	5,227	0.1%
Other, whole-frozen	288	0.2%	13,376	0.2%
Flatfish, block-frozen	3,221	2.6%	124,513	2.0%
Flatfish, frozen fillets	2,343	1.9%	130,450	2.1%
Redfish, block-frozen	4,222	3.4%	169,309	2.8%
Redfish, frozen fillets	27,272	21.8%	1,056,130	17.2%
Ling, block-frozen	481	0.4%	16,948	0.3%
Ling, frozen fillets	738	0.6%	28,235	0.5%
Tusk, block-frozen	2	0.0%	68	0.0%
Tusk, frozen fillets	32	0.0%	1,182	0.0%
Catfish, block-frozen	687	0.5%	43,312	0.7%
Catfish, frozen fillets	1,699	1.4%	120,957	2.0%
Saithe, block-frozen	8,806	7.0%	258,997	4.2%
Saithe, frozen fillets	4,536	3.6%	198,684	3.2%
Haddock, block-frozen	6,919	5.5%	397,531	6.5%
Haddock, frozen fillets	9,072	7.2%	621,258	10.1%
Cod, block-frozen	13,800	11.0%	766,520	12.5%
Cod, frozen fillets	28,313	22.6%	1,948,336	31.7%
Other frozen; mince block or fillets	1,469	1.2%	27,012	0.4%
Total export	125,344	100.0%	6,148,139	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verzlunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1984

(Thousands of tonnes and thousands of ISK)

	1984 tonnes	%	1984 value	%
Total production	119,198		6,888,635	
Flatfish whole-frozen	11,061	9.1%	278,722	4.0%
Redfish, whole-frozen	1,741	1.4%	69,973	1.0%
Ling, whole-frozen	17	0.0%	583	0.0%
Tusk, whole-frozen	90	0.1%	1,857	0.0%
Catfish, whole-frozen	267	0.2%	5,559	0.1%
Saithe, whole-frozen	186	0.2%	4,093	0.1%
Haddock, whole-frozen	39	0.0%	1,546	0.0%
Cod, whole-frozen	829	0.7%	19,292	0.3%
Other, whole-frozen	131	0.1%	9,156	0.1%
Flatfish, block-frozen	4,354	3.6%	185,984	2.6%
Flatfish, frozen fillets	3,949	3.2%	245,656	3.5%
Redfish, block-frozen	4,397	3.6%	187,328	2.7%
Redfish, frozen fillets	22,681	18.6%	1,080,120	15.4%
Ling, block-frozen	219	0.2%	8,546	0.1%
Ling, frozen fillets	420	0.3%	20,747	0.3%
Tusk, block-frozen	5	0.0%	162	0.0%
Tusk, frozen fillets	25	0.0%	1,169	0.0%
Catfish, block-frozen	409	0.3%	29,641	0.4%
Catfish, frozen fillets	1,306	1.1%	123,793	1.8%
Saithe, block-frozen	7,848	6.4%	237,762	3.4%
Saithe, frozen fillets	4,439	3.6%	188,998	2.7%
Haddock, block-frozen	4,115	3.4%	301,102	4.3%
Haddock, frozen fillets	6,461	5.3%	625,516	8.9%
Cod, block-frozen	16,883	13.9%	1,064,842	15.1%
Cod, frozen fillets	28,251	23.2%	2,315,252	32.9%
Other frozen; mince block or fillets	1,664	1.4%	28,435	0.4%
Total export	121,784	100.0%	7,035,834	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verzlunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1985

(Thousands of tonnes and thousands of ISK)

	1985 tonnes	%	1985 value	%
Total production	119,243		9,755,424	
Flatfish whole-frozen	9,110	6.9%	319,815	2.9%
Redfish, whole-frozen	5,005	3.8%	253,123	2.3%
Ling, whole-frozen	16	0.0%	327	0.0%
Tusk, whole-frozen	242	0.2%	6,963	0.1%
Catfish, whole-frozen	221	0.2%	6,180	0.1%
Saithe, whole-frozen	482	0.4%	13,168	0.1%
Haddock, whole-frozen	45	0.0%	1,295	0.0%
Cod, whole-frozen	1,380	1.0%	35,342	0.3%
Other, whole-frozen	221	0.2%	17,800	0.2%
Flatfish, block-frozen	2,435	1.8%	158,636	1.5%
Flatfish, frozen fillets	4,601	3.5%	450,154	4.2%
Redfish, block-frozen	1,516	1.1%	99,801	0.9%
Redfish, frozen fillets	19,278	14.6%	1,349,965	12.5%
Ling, block-frozen	138	0.1%	7,167	0.1%
Ling, frozen fillets	479	0.4%	32,006	0.3%
Tusk, block-frozen	8	0.0%	304	0.0%
Tusk, frozen fillets	124	0.1%	8,050	0.1%
Catfish, block-frozen	506	0.4%	47,669	0.4%
Catfish, frozen fillets	1,895	1.4%	220,587	2.0%
Saithe, block-frozen	8,567	6.5%	393,104	3.6%
Saithe, frozen fillets	8,400	6.4%	439,613	4.1%
Haddock, block-frozen	3,690	2.8%	373,237	3.4%
Haddock, frozen fillets	5,586	4.2%	779,033	7.2%
Cod, block-frozen	17,184	13.0%	1,498,787	13.8%
Cod, frozen fillets	38,745	29.3%	4,260,436	39.3%
Other frozen; mince block or fillets	2,230	1.7%	69,005	0.6%
Total export	132,103	100.0%	10,841,567	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verzlunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur: 1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1986

(Thousands of tonnes and thousands of ISK)

	1986 tonnes	%	1986 value	%
Total production	119,843	100.0%	11,528,300	100.0%
Flatfish whole-frozen	10,720	7.9%	546,252	4.2%
Redfish, whole-frozen	6,646	4.9%	391,668	3.0%
Ling, whole-frozen	101	0.1%	3,172	0.0%
Tusk, whole-frozen	461	0.3%	13,544	0.1%
Catfish, whole-frozen	160	0.1%	4,801	0.0%
Saithe, whole-frozen	658	0.5%	33,629	0.3%
Haddock, whole-frozen	73	0.1%	5,641	0.0%
Cod, whole-frozen	1,389	1.0%	46,882	0.4%
Other, whole-frozen	151	0.1%	15,700	0.1%
Flatfish, block-frozen	2,760	2.0%	237,542	1.8%
Flatfish, frozen fillets	4,668	3.4%	518,169	3.9%
Redfish, block-frozen	1,877	1.4%	168,336	1.3%
Redfish, frozen fillets	16,906	12.5%	1,446,792	11.0%
Ling, block-frozen	86	0.1%	5,167	0.0%
Ling, frozen fillets	719	0.5%	51,407	0.4%
Tusk, block-frozen	21	0.0%	1,456	0.0%
Tusk, frozen fillets	242	0.2%	16,816	0.1%
Catfish, block-frozen	543	0.4%	51,735	0.4%
Catfish, frozen fillets	2,400	1.8%	260,466	2.0%
Saithe, block-frozen	8,761	6.5%	647,409	4.9%
Saithe, frozen fillets	8,143	6.0%	520,600	4.0%
Haddock, block-frozen	2,703	2.0%	319,137	2.4%
Haddock, frozen fillets	5,108	3.8%	767,766	5.8%
Cod, block-frozen	16,859	12.4%	1,882,973	14.3%
Cod, frozen fillets	40,931	30.2%	5,095,192	38.7%
Other frozen; mince block or fillets	2,656	2.0%	109,209	0.8%
Total export	135,743	100.0%	13,161,461	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1987

(Thousands of tonnes and thousands of ISK)

	1987 tonnes	%	1987 value	%
Total production	138,045		15,236,192	
Flatfish whole-frozen	20,366	15.4%	1,503,352	10.2%
Redfish, whole-frozen	4,301	3.2%	313,761	2.1%
Ling, whole-frozen	29	0.0%	848	0.0%
Tusk, whole-frozen	169	0.1%	5,475	0.0%
Catfish, whole-frozen	88	0.1%	2,735	0.0%
Saithe, whole-frozen	118	0.1%	3,198	0.0%
Haddock, whole-frozen	52	0.0%	2,071	0.0%
Cod, whole-frozen	2,886	2.2%	129,198	0.9%
Other, whole-frozen	63	0.0%	11,565	0.1%
Flatfish, block-frozen	2,396	1.8%	259,959	1.8%
Flatfish, frozen fillets	3,883	2.9%	586,212	4.0%
Redfish, block-frozen	1,702	1.3%	178,410	1.2%
Redfish, frozen fillets	13,606	10.3%	1,410,545	9.6%
Ling, block-frozen	79	0.1%	7,094	0.0%
Ling, frozen fillets	501	0.4%	47,447	0.3%
Tusk, block-frozen	35	0.0%	2,723	0.0%
Tusk, frozen fillets	149	0.1%	12,415	0.1%
Catfish, block-frozen	320	0.2%	34,438	0.2%
Catfish, frozen fillets	2,448	1.8%	326,027	2.2%
Saithe, block-frozen	8,524	6.4%	738,930	5.0%
Saithe, frozen fillets	9,909	7.5%	856,319	5.8%
Haddock, block-frozen	1,581	1.2%	219,602	1.5%
Haddock, frozen fillets	3,520	2.7%	615,568	4.2%
Cod, block-frozen	10,372	7.8%	1,451,607	9.9%
Cod, frozen fillets	42,377	31.9%	5,861,477	39.8%
Other frozen; mince block or fillets	3,188	2.4%	142,548	1.0%
Total export	132,660	100.0%	14,723,524	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur: 1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1988

(Thousands of tonnes and thousands of ISK)

	1988 tonnes	%	1988 value	%
Total production	152,524		18,177,232	
Flatfish whole-frozen	23,090	17.5%	1,870,790	11.8%
Redfish, whole-frozen	13,955	10.6%	1,361,087	8.6%
Ling, whole-frozen	52	0.0%	1,170	0.0%
Tusk, whole-frozen	73	0.1%	3,488	0.0%
Catfish, whole-frozen	173	0.1%	5,685	0.0%
Saithe, whole-frozen	91	0.1%	3,409	0.0%
Haddock, whole-frozen	164	0.1%	7,530	0.0%
Cod, whole-frozen	2,533	1.9%	124,842	0.8%
Other, whole-frozen	248	0.2%	23,065	0.1%
Flatfish, block-frozen	1,702	1.3%	197,832	1.3%
Flatfish, frozen fillets	2,883	2.2%	430,709	2.7%
Redfish, block-frozen	906	0.7%	93,206	0.6%
Redfish, frozen fillets	9,779	7.4%	1,082,228	6.8%
Ling, block-frozen	31	0.0%	3,199	0.0%
Ling, frozen fillets	247	0.2%	25,690	0.2%
Tusk, block-frozen	2	0.0%	171	0.0%
Tusk, frozen fillets	116	0.1%	9,050	0.1%
Catfish, block-frozen	480	0.4%	59,195	0.4%
Catfish, frozen fillets	2,177	1.6%	332,456	2.1%
Saithe, block-frozen	9,687	7.3%	831,451	5.3%
Saithe, frozen fillets	6,051	4.6%	532,242	3.4%
Haddock, block-frozen	1,953	1.5%	287,026	1.8%
Haddock, frozen fillets	4,986	3.8%	956,460	6.1%
Cod, block-frozen	14,908	11.3%	1,959,402	12.4%
Cod, frozen fillets	34,275	26.0%	5,524,906	35.0%
Other frozen; mince block or fillets	1,484	1.1%	73,973	0.5%
Total export	132,046	100.0%	15,800,262	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verzlunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur: 1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1989

(Thousands of tonnes and thousands of ISK)

	1989 tonnes	%	1989 value	%
Total production	151,785		22,927,489	
Flatfish whole-frozen	29,010	18.9%	2,927,060	12.9%
Redfish, whole-frozen	13,537	8.8%	1,188,292	5.2%
Ling, whole-frozen	25	0.0%	906	0.0%
Tusk, whole-frozen	47	0.0%	2,483	0.0%
Catfish, whole-frozen	166	0.1%	8,801	0.0%
Saithe, whole-frozen	46	0.0%	2,555	0.0%
Haddock, whole-frozen	244	0.2%	16,110	0.1%
Cod, whole-frozen	223	0.1%	174,907	0.8%
Other, whole-frozen	190	0.1%	27,986	0.1%
Flatfish, block-frozen	2,611	1.7%	335,588	1.5%
Flatfish, frozen fillets	6,235	4.1%	1,071,850	4.7%
Redfish, block-frozen	2,401	1.6%	295,438	1.3%
Redfish, frozen fillets	10,680	7.0%	1,519,075	6.7%
Ling, block-frozen	64	0.0%	6,693	0.0%
Ling, frozen fillets	439	0.3%	60,046	0.3%
Tusk, block-frozen	12	0.0%	1,817	0.0%
Tusk, frozen fillets	87	0.1%	11,001	0.0%
Catfish, block-frozen	434	0.3%	65,170	0.3%
Catfish, frozen fillets	2,382	1.6%	461,715	2.0%
Saithe, block-frozen	14,525	9.5%	1,467,602	6.5%
Saithe, frozen fillets	7,076	4.6%	770,669	3.4%
Haddock, block-frozen	2,321	1.5%	444,435	2.0%
Haddock, frozen fillets	6,225	4.1%	1,626,219	7.2%
Cod, block-frozen	17,187	11.2%	2,870,573	12.6%
Cod, frozen fillets	36,000	23.4%	7,294,424	32.1%
Other frozen; mince block or fillets	1,435	0.9%	91,648	0.4%
Total export	153,600	100.0%	22,743,063	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verzlunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1990

(Thousands of tonnes and thousands of ISK)

	1990 tonnes	%	1990 value	%
Total production	148,032		29,290,029	
Flatfish whole-frozen	17,594	11.3%	2,364,138	7.8%
Redfish, whole-frozen	12,850	8.2%	1,733,392	5.7%
Ling, whole-frozen	46	0.0%	2,197	0.0%
Tusk, whole-frozen	107	0.1%	6,530	0.0%
Catfish, whole-frozen	251	0.2%	18,535	0.1%
Saithe, whole-frozen	28	0.0%	2,284	0.0%
Haddock, whole-frozen	301	0.2%	29,507	0.1%
Cod, whole-frozen	1,629	1.0%	197,833	0.6%
Other, whole-frozen	137	0.1%	23,923	0.1%
Flatfish, block-frozen	1,601	1.0%	273,675	0.9%
Flatfish, frozen fillets	4,309	2.8%	973,543	3.2%
Redfish, block-frozen	3,201	2.0%	491,652	1.6%
Redfish, frozen fillets	11,379	7.3%	1,904,432	6.3%
Ling, block-frozen	86	0.1%	11,578	0.0%
Ling, frozen fillets	413	0.3%	75,717	0.2%
Tusk, block-frozen	217	0.1%	36,980	0.1%
Tusk, frozen fillets	295	0.2%	51,819	0.2%
Catfish, block-frozen	538	0.3%	116,524	0.4%
Catfish, frozen fillets	2,422	1.5%	607,012	2.0%
Saithe, block-frozen	16,828	10.8%	2,176,064	7.1%
Saithe, frozen fillets	10,255	6.6%	1,351,377	4.4%
Haddock, block-frozen	3,163	2.0%	797,610	2.6%
Haddock, frozen fillets	7,644	4.9%	2,239,766	7.4%
Cod, block-frozen	22,975	14.7%	5,544,373	18.2%
Cod, frozen fillets	35,975	23.0%	9,279,599	30.5%
Other frozen; mince block or fillets	2,134	1.4%	147,381	0.5%
Total export	156,377	100.0%	30,457,441	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of frozen groundfish by type of products at 1991

(Thousands of tonnes and thousands of ISK)

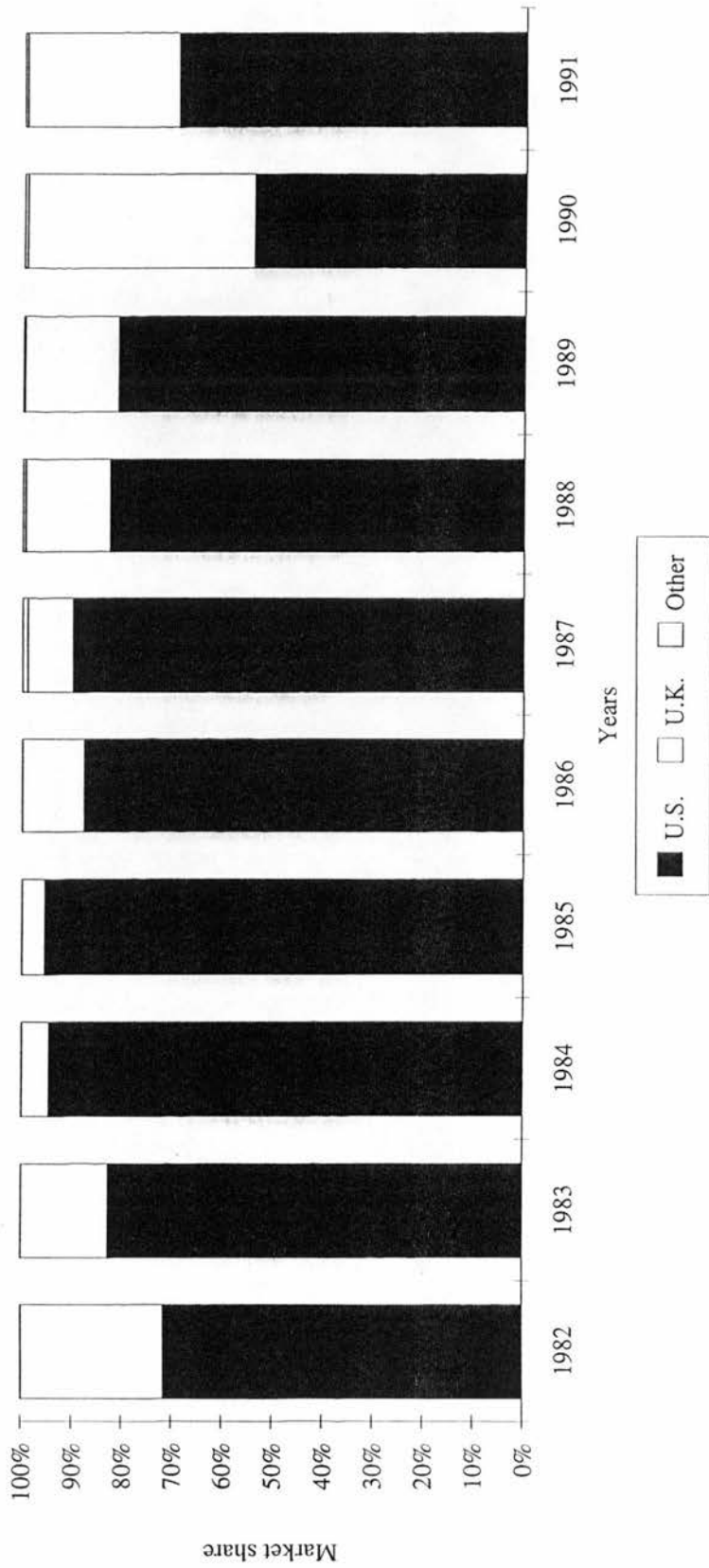
	1991 tonnes	%	1991 values	%
Total production	154,131		34,384,811	
Flatfish whole-frozen	19,091	12.4%	3,116,300	9.1%
Redfish, whole-frozen	17,568	11.4%	2,275,868	6.7%
Ling, whole-frozen	120	0.1%	12,873	0.0%
Tusk, whole-frozen	632	0.4%	57,427	0.2%
Catfish, whole-frozen	391	0.3%	25,884	0.1%
Saithe, whole-frozen	35	0.0%	5,160	0.0%
Haddock, whole-frozen	200	0.1%	17,399	0.1%
Cod, whole-frozen	1,699	1.1%	179,624	0.5%
Other, whole-frozen	332	0.2%	49,216	0.1%
Flatfish, block-frozen	1,250	0.8%	278,298	0.8%
Flatfish, frozen fillets	4,497	2.9%	1,336,380	3.9%
Redfish, block-frozen	4,009	2.6%	715,827	2.1%
Redfish, frozen fillets	7,383	4.8%	1,411,922	4.1%
Ling, block-frozen	78	0.1%	12,876	0.0%
Ling, frozen fillets	291	0.2%	60,308	0.2%
Tusk, block-frozen	313	0.2%	56,725	0.2%
Tusk, frozen fillets	193	0.1%	36,220	0.1%
Catfish, block-frozen	657	0.4%	131,847	0.4%
Catfish, frozen fillets		0.0%		0.0%
Saithe, block-frozen	17,893	11.6%	3,160,924	9.3%
Saithe, frozen fillets	9,402	6.1%	1,641,645	4.8%
Haddock, block-frozen	2,965	1.9%	875,483	2.6%
Haddock, frozen fillets	6,300	4.1%	2,255,733	6.6%
Cod, block-frozen	23,106	15.0%	6,100,970	17.9%
Cod, frozen fillets	32,813	21.3%	10,058,732	29.4%
Other frozen; mince block or fillets	3,132	2.0%	285,097	0.8%
Total export	154,350	100.0%	34,158,738	100.0%

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

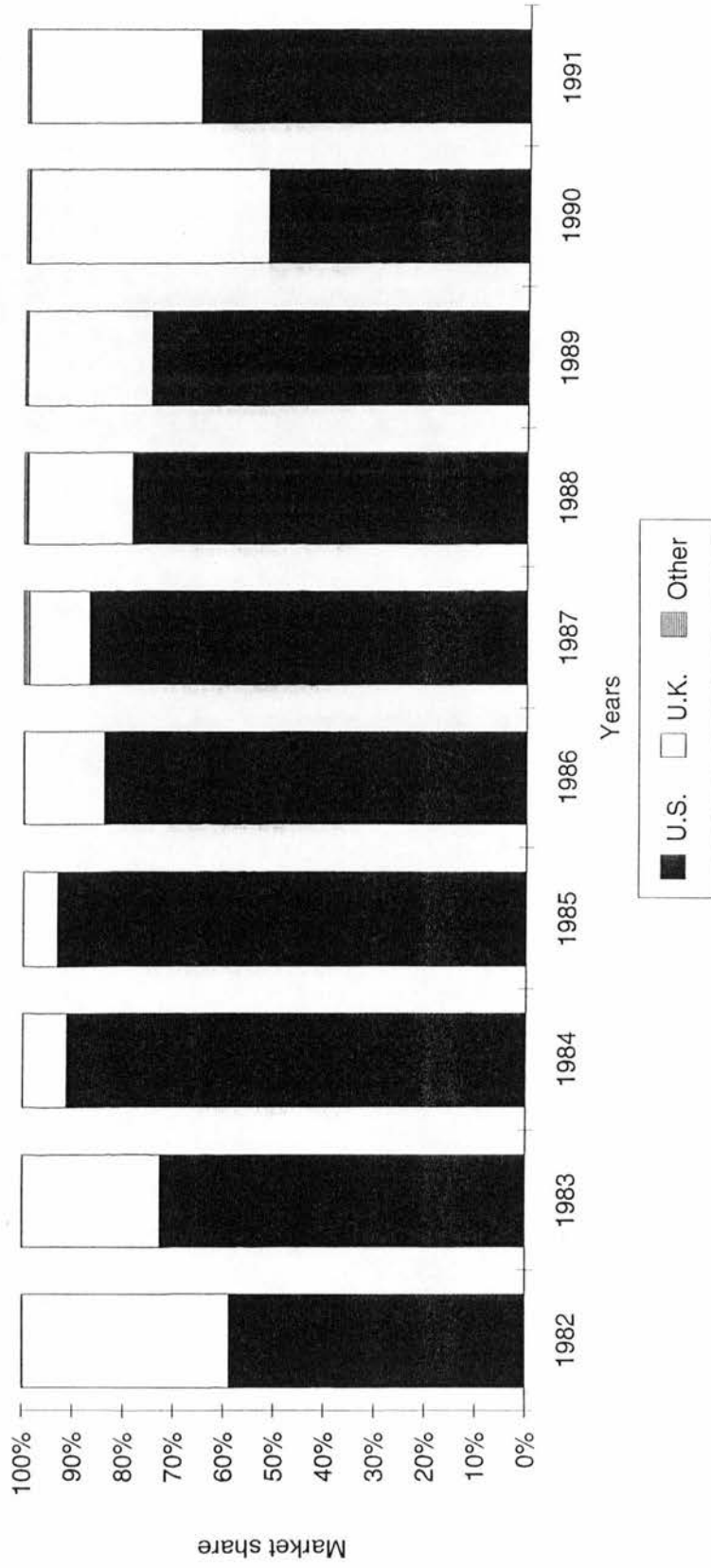
Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur: 1989,90,91, Fiskifélag Íslands

Appendix 3.15.

Frozen haddock fillets.
 Percentage distribution of exports value by principal markets, 1982-1991.

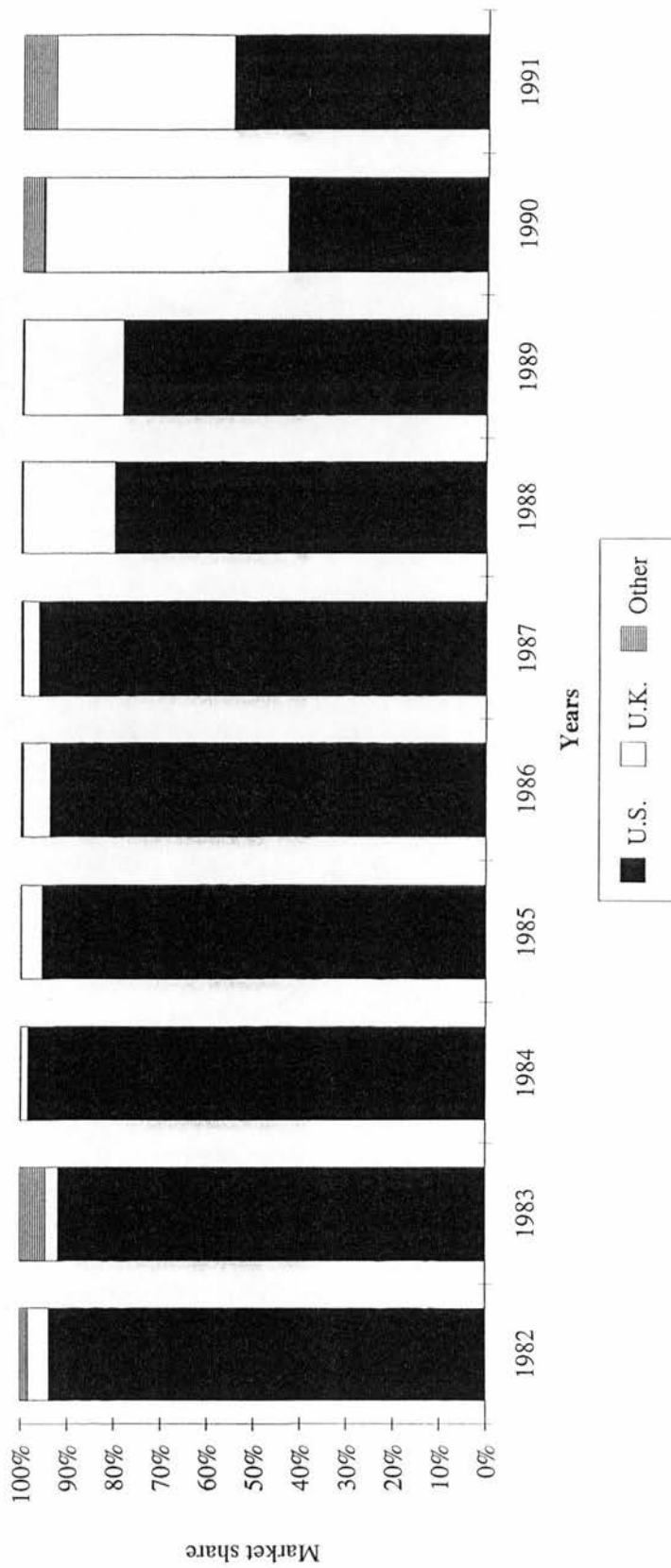


Frozen haddock fillets.
Percentage distribution of exports volume by principal markets, 1982-1991.

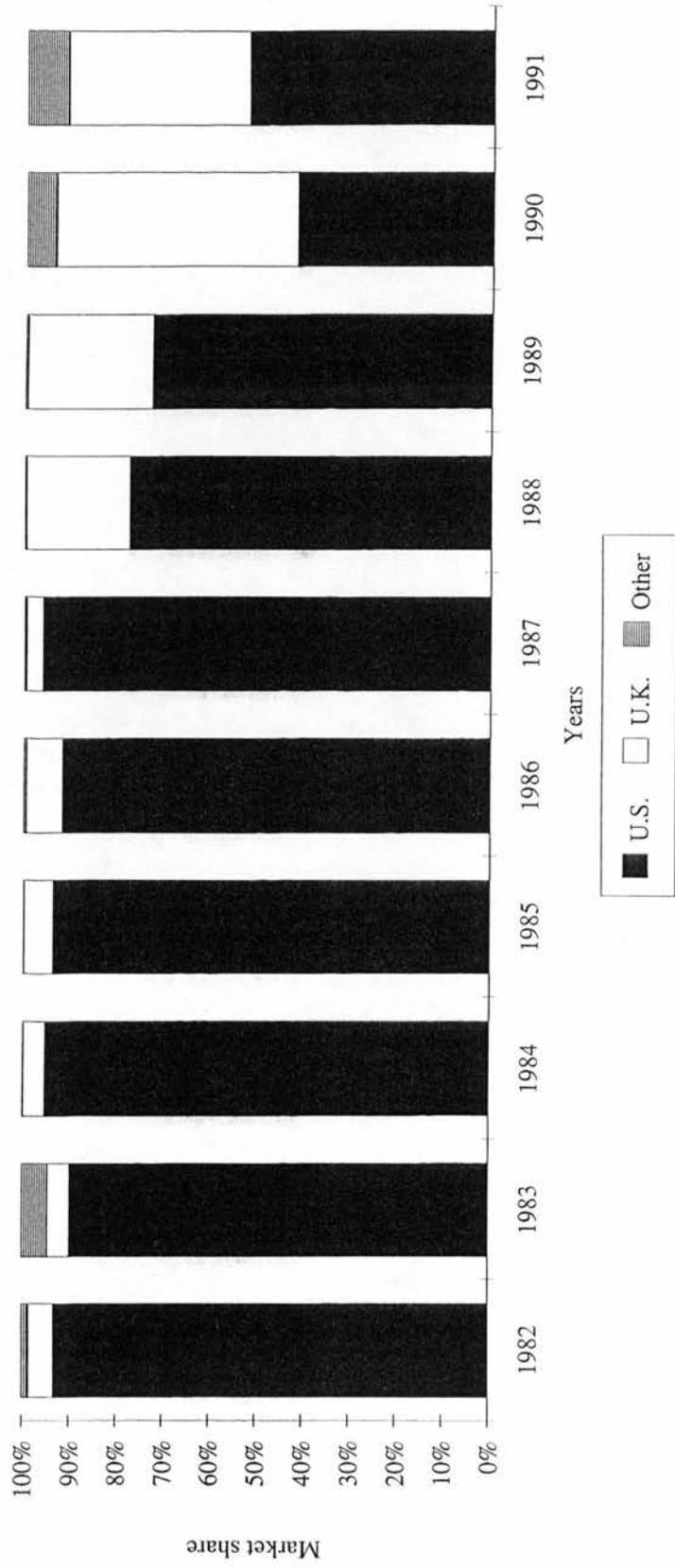


Source
 Utvegur, various issues, Fiskifelag Islands.

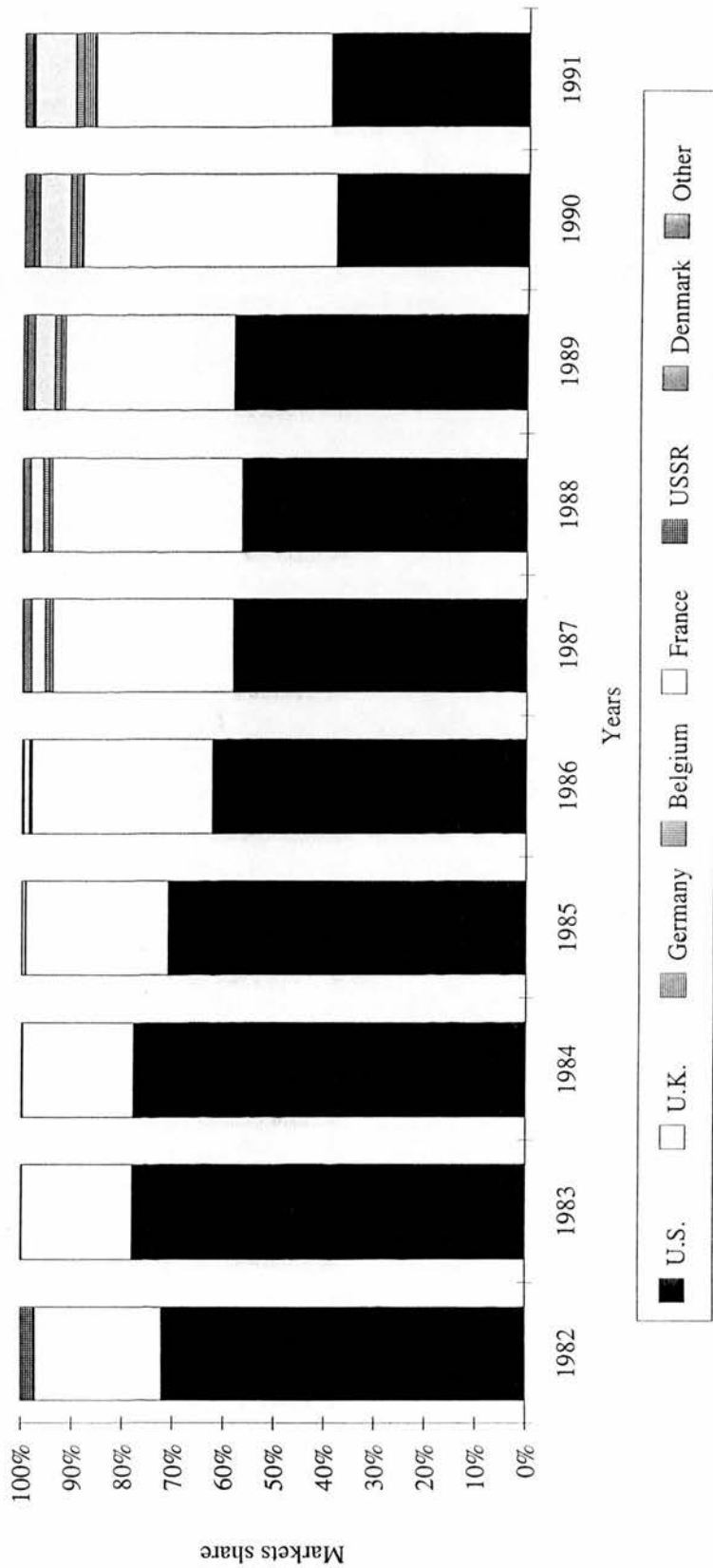
Block frozen haddock.
Percentage distribution of exports value by markets,
1982-1991.



Block frozen haddock.
Percentage distribution of exports volume by markets,
1982-1991.

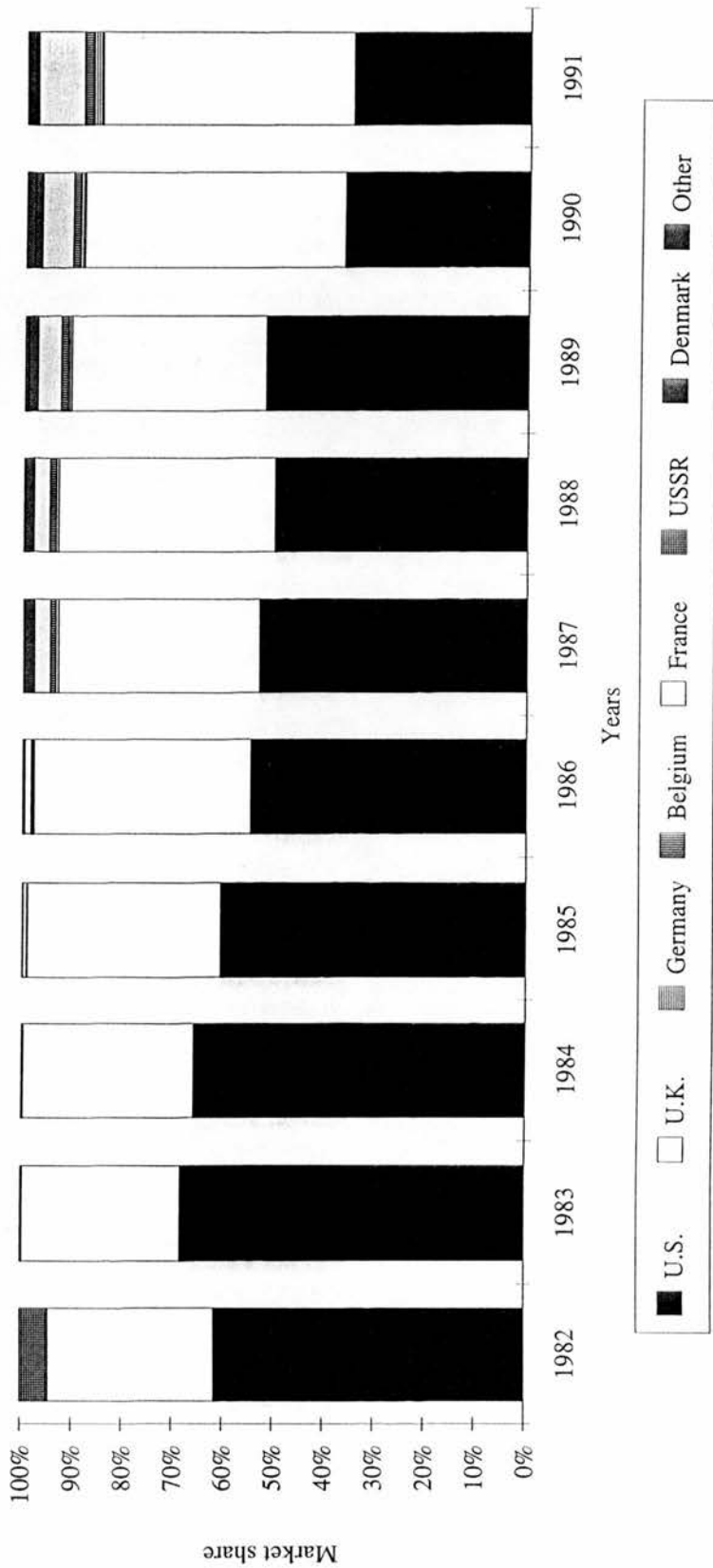


**Frozen cod fillets.
 Percentage distribution of exports value by principal markets, 1982-1991**



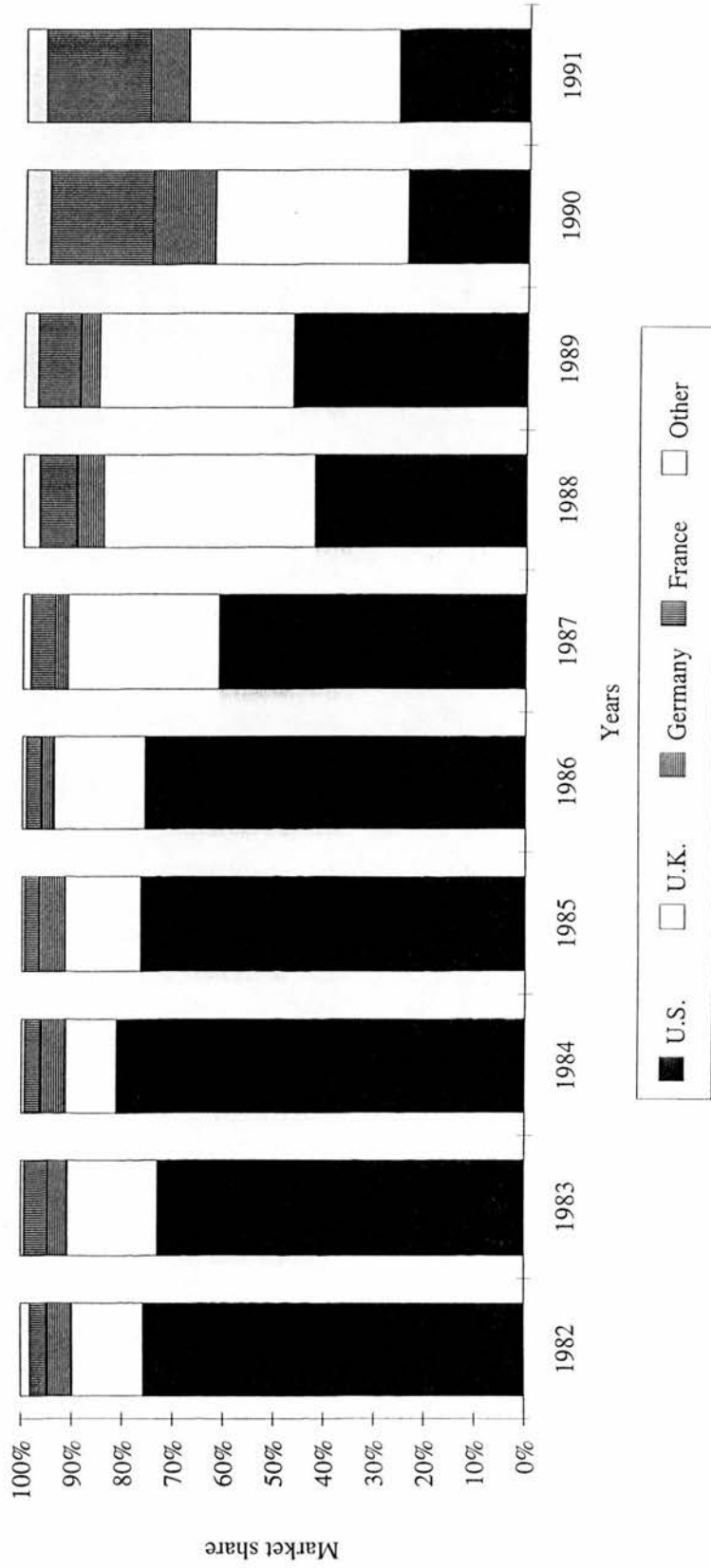
Source
 Útvegur, various issues, Fiskifélag Íslands.

Frozen cod filets
Percentage distribution of export volume by principal markets, 1982-1991



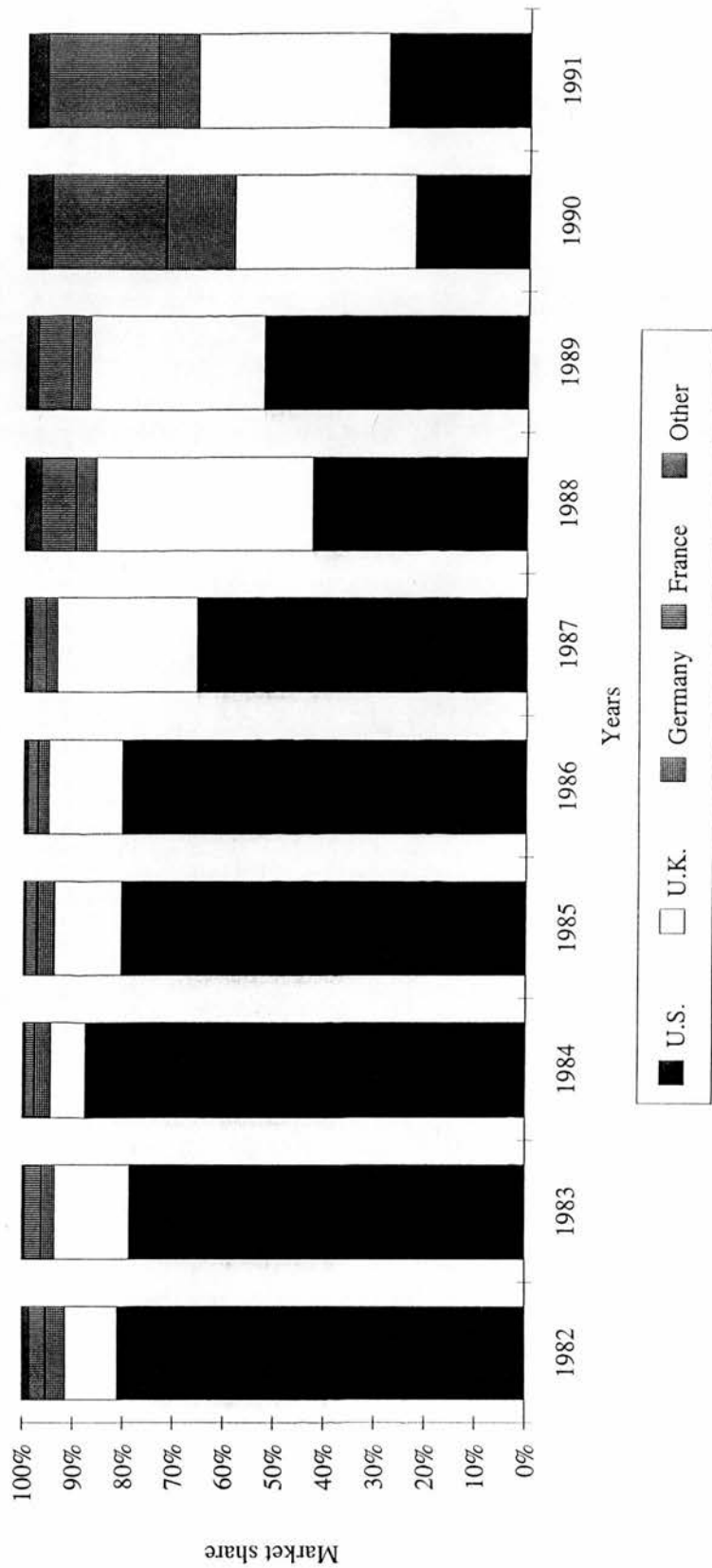
Source
 Utvegur, various issues, Fiskifelag Islands

Cod block frozen.
Percentage distribution of exports value by principal markets, 1982-1991.



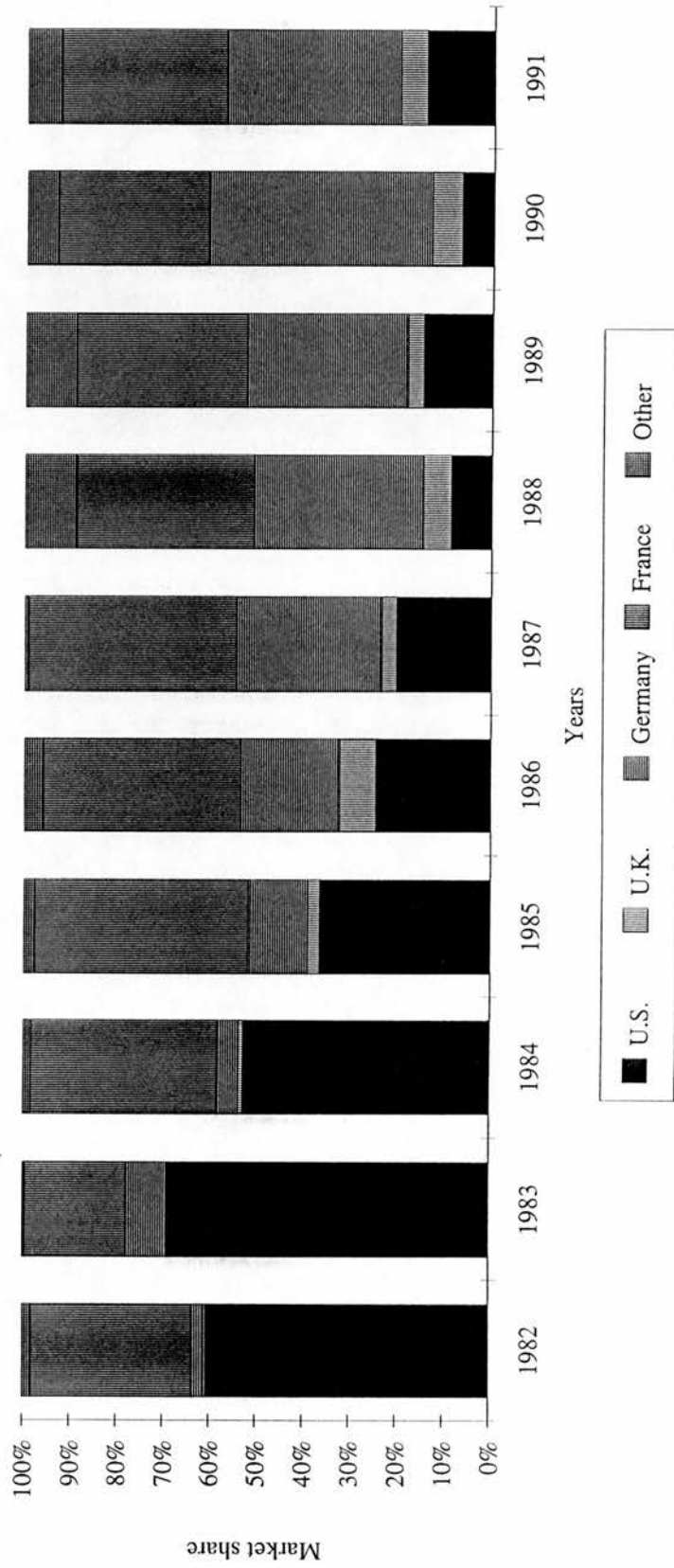
Source
 Utvegur, various issues, Fiskifélag Islands

Cod block frozen.
Percentage distribution of exports volume by principal markets, 1982-1991.



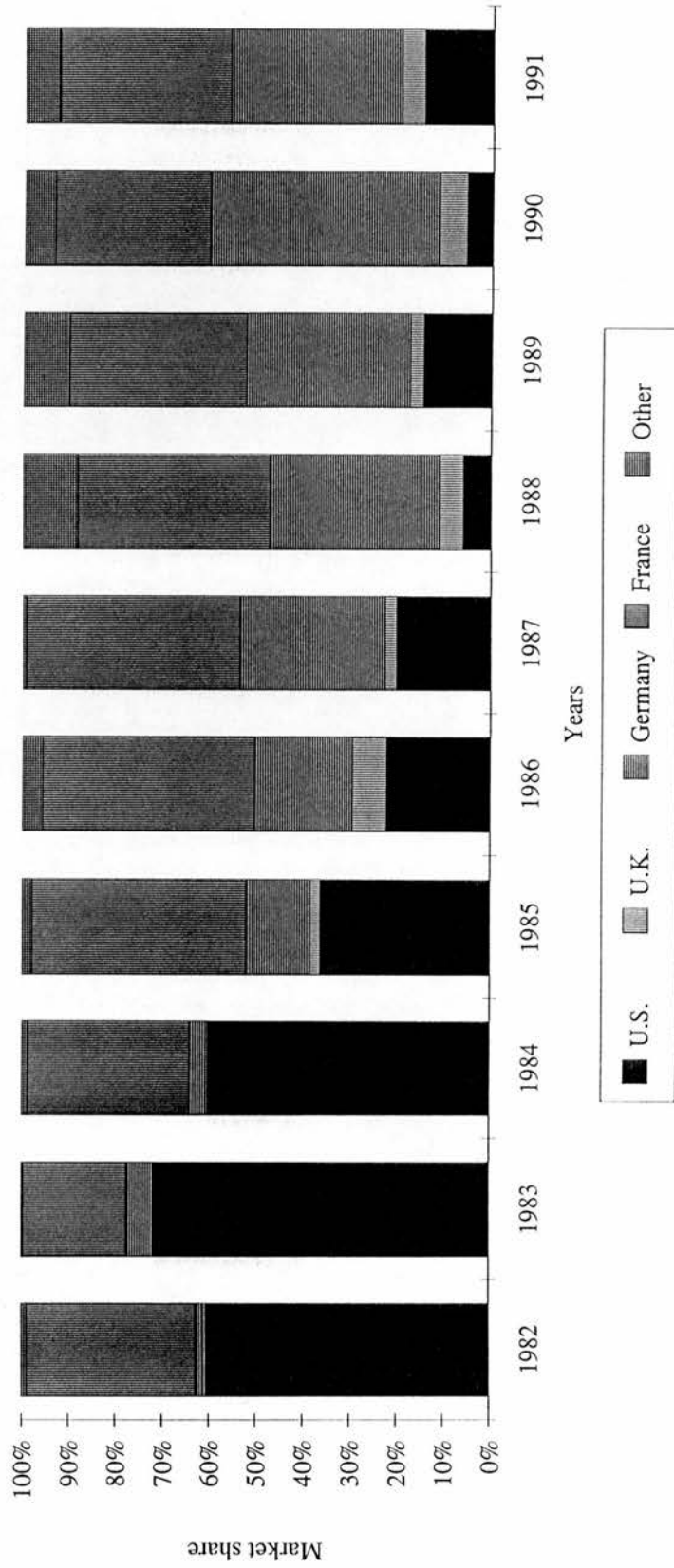
Source
 Utvegur, various issues, Fiskifélag Islands

Saithe block-frozen.
Percentage distribution of exports volume by principal markets,
1982-1991.



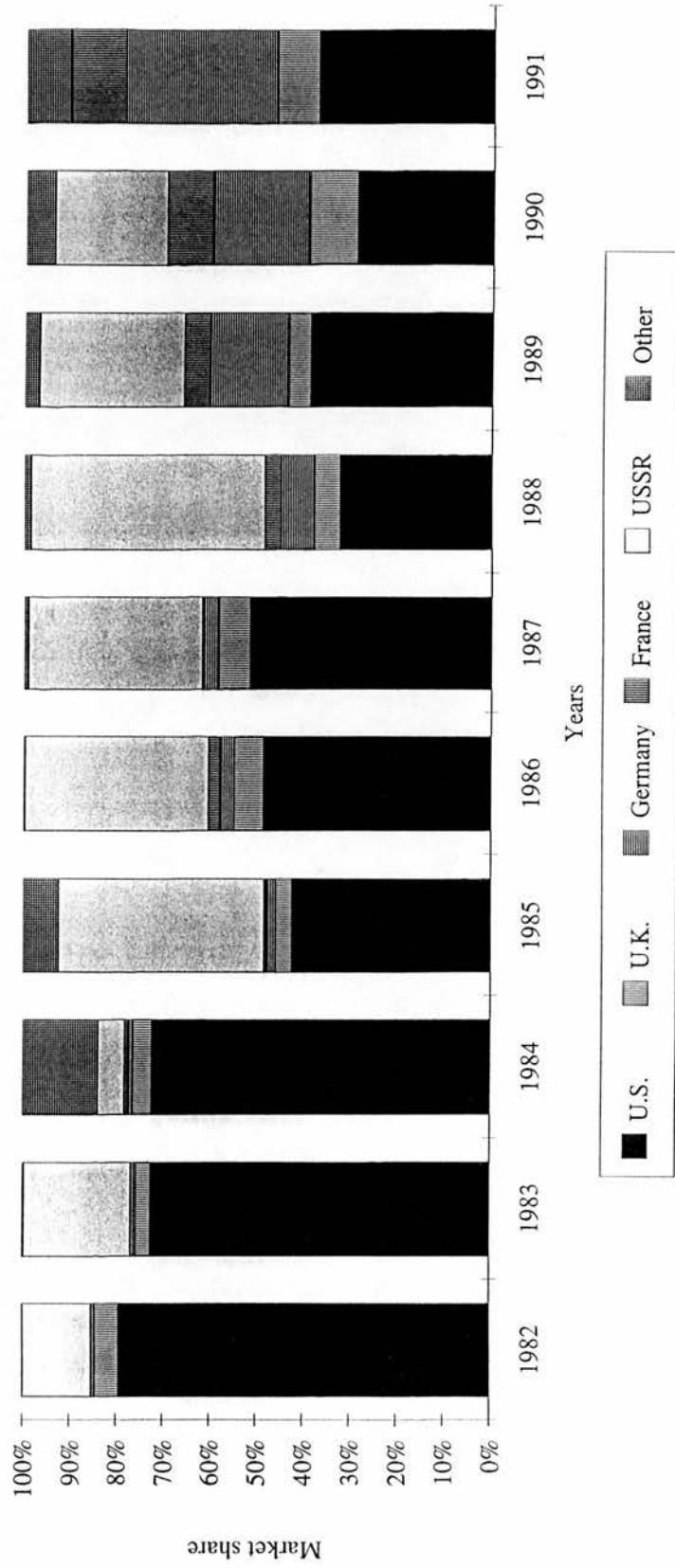
Source
 Utvegur, various issues, Fiskifelag Islands.

Saithe block-frozen.
Percentage distribution of exports value by principal markets,
1982-1991.

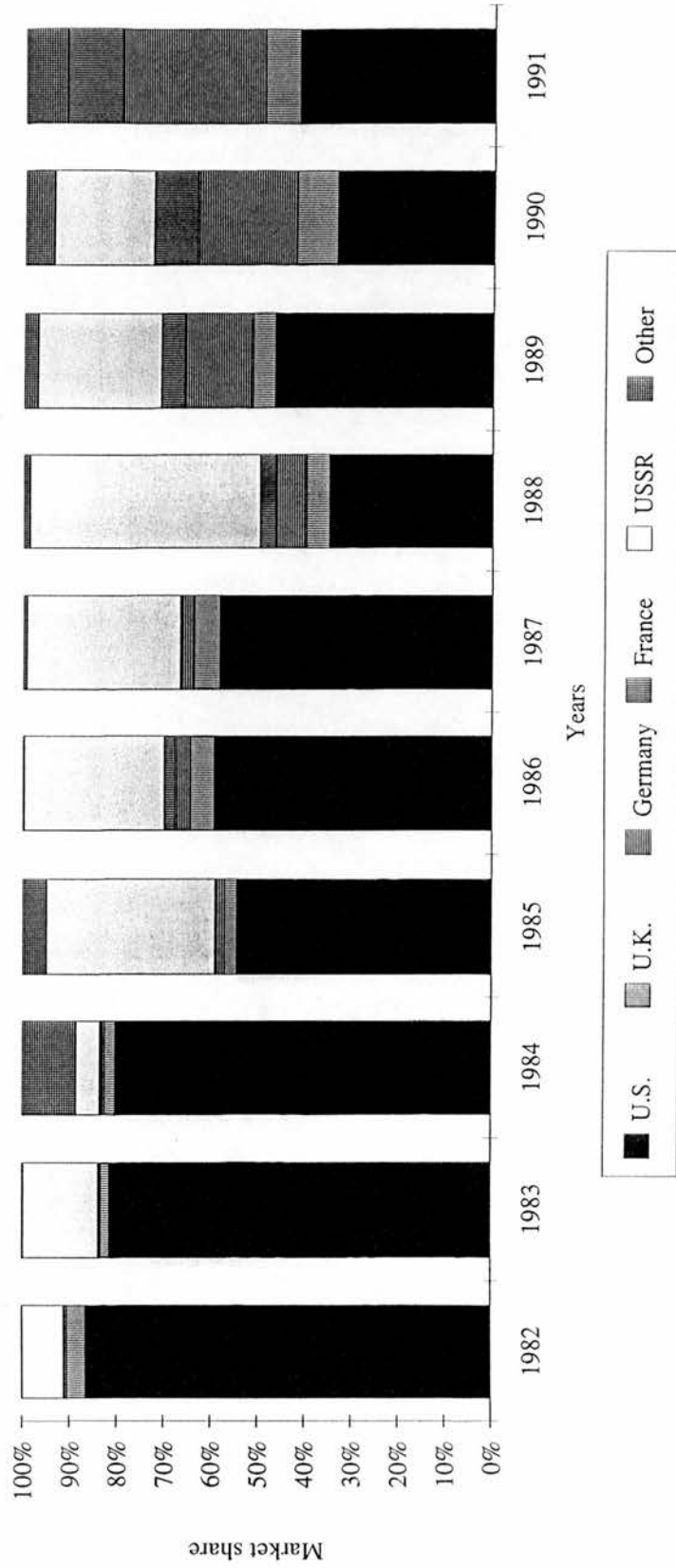


Source
 Utvegur, various issues, Fiskifélag Islands

Saithe frozen fillets.
Percentage distribution of exports volume by principal markets,
1982-1991.



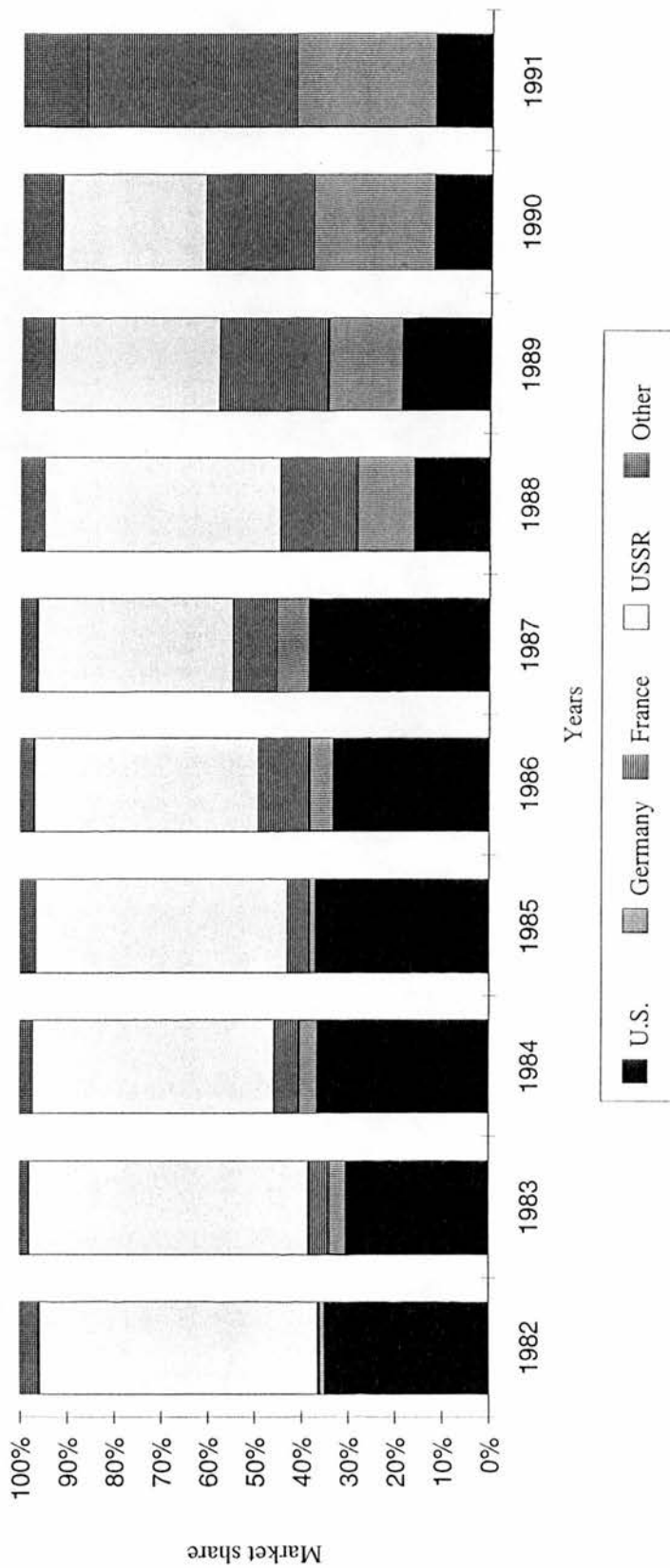
**Saithe frozen fillets.
Percentage distribution of exports value by principal markets,
1982-1991.**



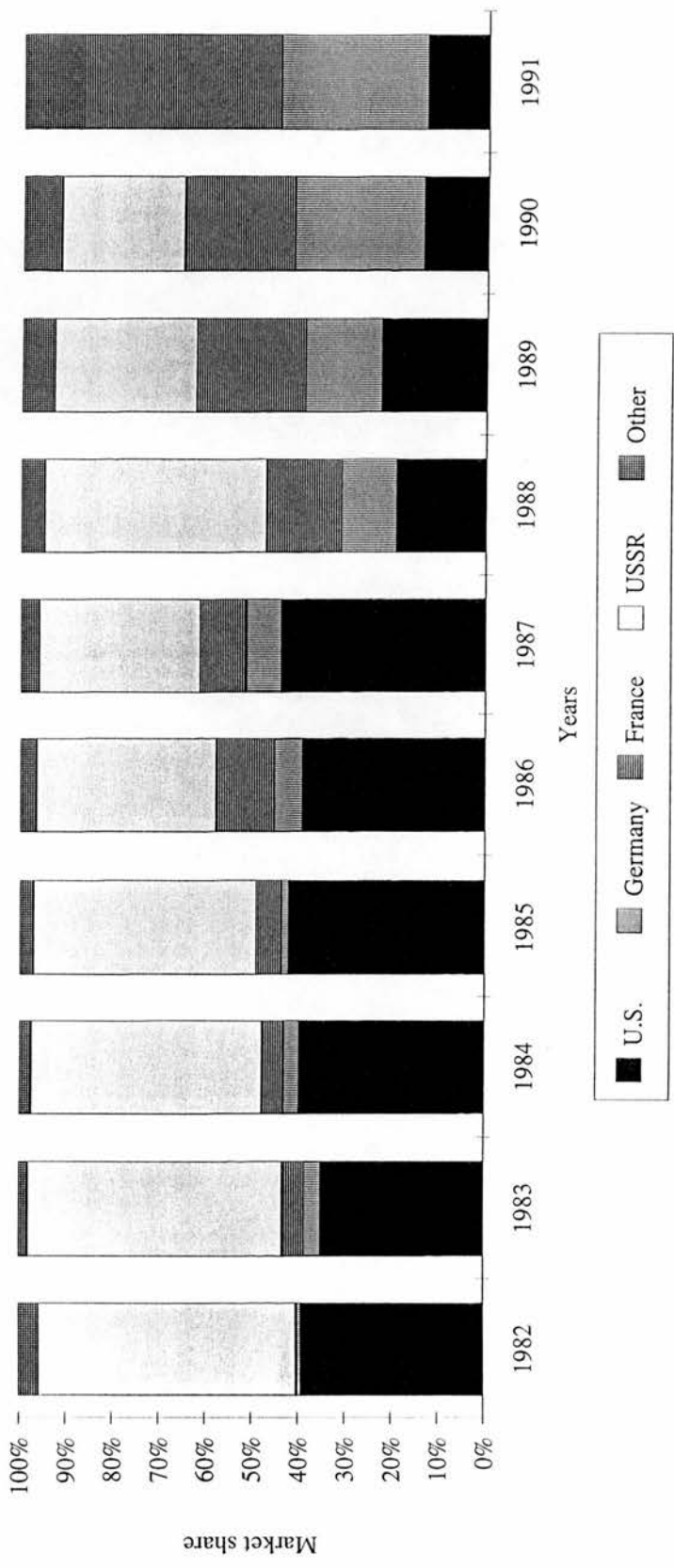
Source
Utvegur, various issues, Fiskifélag Islands.

Appendix 3.16.

Redfish, frozen fillets.
Percentage distribution of exports volume by principal markets,
1982-1991.



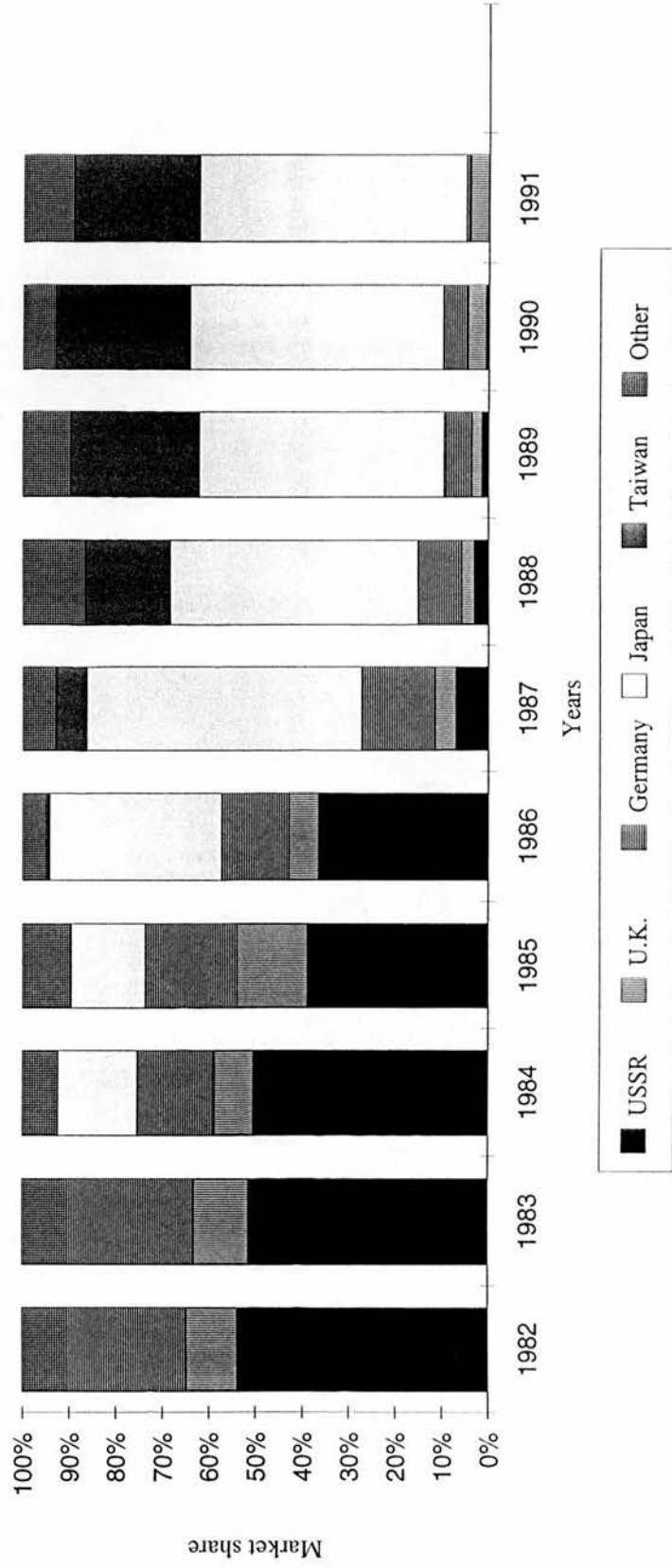
Redfish, frozen fillets.
Percentage distribution of exports value by principal markets,
1982-1991.



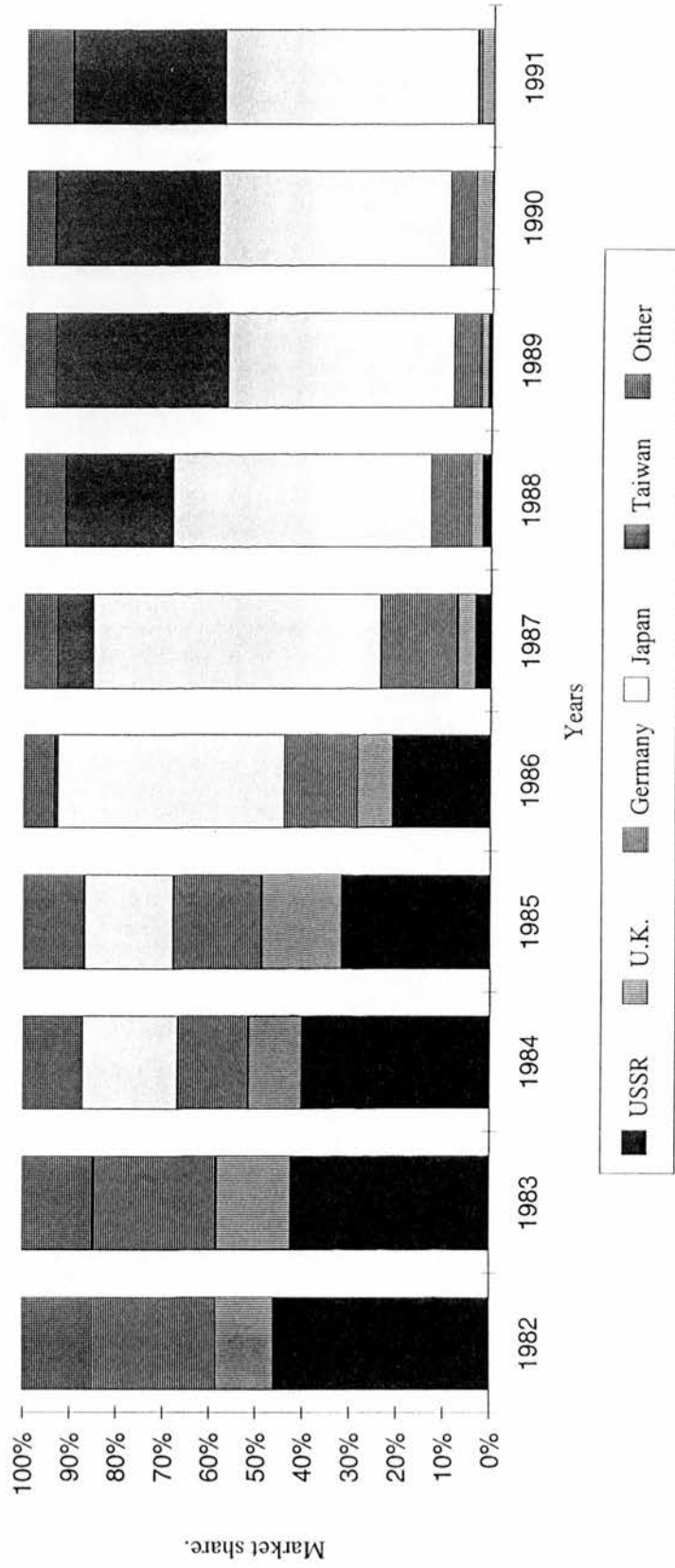
Source
 Utvegur, various issues, Fiskifelag Islands.

Appendix 3.17.

Whole-frozen flatfish.
 Percentage distribution of exports volume by markets,
 1982-1991.



**Whole-frozen flatfish.
Percentage distribution of exports value by markets,
1982-1991.**



Source
Utvegur, various issues, Fiskifélag Islands.

Appendix 3.18.

Export of marine products in million of ISK at current prices, 1981-1991

	1981	%	1982	%	1983	%	1984	%	1985	%	1986	%
Total export of marine products	5,179.6	100.0%	6,518.2	100.0%	13,048.5	100.0%	16,337.7	100.0%	25,939.6	100.0%	35,469.0	100.0%
Freezing	1,996.6	38.5%	3,210.0	49.2%	7,423.9	56.9%	8,801.1	53.9%	13,776.3	53.1%	18,650.1	52.6%
Demersal species	1,749.5	33.8%	2,794.1	42.9%	6,187.9	47.4%	7,163.5	43.8%	10,951.2	42.2%	13,532.0	38.2%
Shrimp	78.2	1.5%	116.7	1.8%	505.1	3.9%	839.1	5.1%	1,774.9	6.8%	3,636.2	10.3%
Lobster	66.9	1.3%	121.0	1.9%	297.5	2.3%	311.6	1.9%	422.5	1.6%	518.8	1.5%
Scallop	50.3	1.0%	97.5	1.5%	317.3	2.4%	345.2	2.1%	482.9	1.9%	698.0	2.0%
Herring	49.3	1.0%	72.1	1.1%	116.1	0.9%	128.9	0.8%	124.7	0.5%	190.5	0.5%
Capelin	2.4	0.0%	8.6	0.1%	0.0	0.0%	12.8	0.1%	20.1	0.1%	74.6	0.2%
Capelin roe	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Saltfish processing	1,114.2	21.5%	1,639.1	25.1%	2,297.4	17.6%	2,477.0	15.2%	3,934.7	15.2%	6,138.2	17.3%
Uncured saltfish and strips	1,054.2	20.4%	1,539.5	23.6%	2,100.4	16.1%	2,181.9	13.4%	3,623.8	14.0%	5,713.4	16.1%
Dried saltfish	13.6	0.3%	39.0	0.6%	105.4	0.8%	108.9	0.7%	93.9	0.4%	73.5	0.2%
Roe	27.2	0.5%	26.1	0.4%	37.9	0.3%	56.2	0.3%	83.5	0.3%	196.6	0.6%
Lumpfish roe	19.2	0.4%	34.5	0.5%	53.7	0.4%	130.0	0.8%	133.5	0.5%	154.7	0.4%
Stockfish processing	812.5	15.7%	380.2	5.8%	954.4	7.3%	97.9	0.6%	185.7	0.7%	1,135.5	3.2%
Stockfish	812.5	15.7%	316.4	4.9%	741.5	5.7%	62.4	0.4%	179.1	0.7%	900.4	2.5%
Hheads	0.0	0.0%	63.8	1.0%	212.9	1.6%	35.5	0.2%	6.6	0.0%	235.1	0.7%
Herring salted	159.8	3.1%	222.4	3.4%	457.9	3.5%	774.9	4.7%	880.9	3.4%	739.3	2.1%
Meal- and fish oil processing	634.4	12.2%	351.0	5.4%	445.6	3.4%	2,189.6	13.4%	3,412.9	13.2%	3,563.9	10.0%
Meal	424.8	8.2%	247.3	3.8%	417.3	3.2%	1,588.5	9.7%	2,034.7	7.8%	2,673.4	7.5%
Fish oil	209.6	4.0%	103.7	1.6%	28.3	0.2%	601.1	3.7%	1,378.2	5.3%	890.5	2.5%
Liver oil	16.4	0.3%	27.3	0.4%	51.6	0.4%	81.2	0.5%	72.7	0.3%	130.4	0.4%
New and ice-preserved fish	199.2	3.8%	389.0	6.0%	742.7	5.7%	1,079.0	6.6%	2,599.9	10.0%	4,037.8	11.4%
Demersal species	199.2	3.8%	389.0	6.0%	742.7	5.7%	1,079.0	6.6%	2,599.9	10.0%	4,037.8	11.4%
Herring and capelin	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Fish products in airtight containers	63.6	1.2%	163.9	2.5%	381.1	2.9%	504.5	3.1%	713.4	2.8%	841.8	2.4%
Whale processing	82.0	1.6%	130.2	2.0%	288.4	2.2%	330.8	2.0%	348.7	1.3%	192.1	0.5%
Other	100.9	1.9%	5.1	0.1%	5.5	0.0%	1.7	0.0%	14.4	0.1%	39.9	0.1%

Source:

External Trade, various issues, The Statistical Bureau of Iceland, Reykjavik

Export of marine products in million of ISK at current prices, 1981-1991

	1987	%	1988	%	1989	%	1990	%
Total export of marine products	41,434.9	100.0%	45,150.9	100.0%	58,305.7	100.0%	71,611.5	100.0%
Freezing	20,799.4	50.2%	21,250.4	47.1%	29,454.2	50.5%	37,600.3	52.5%
Demersal species	15,475.2	37.3%	15,877.0	35.2%	22,908.6	39.3%	30,651.9	42.8%
Shrimp	3,675.9	8.9%	3,979.7	8.8%	4,332.7	7.4%	4,470.4	6.2%
Lobster	615.2	1.5%	614.0	1.4%	566.2	1.0%	685.9	1.0%
Scallop	411.7	1.0%	236.0	0.5%	538.9	0.9%	738.6	1.0%
Herring	241.1	0.6%	340.8	0.8%	599.3	1.0%	693.8	1.0%
Capelin	380.3	0.9%	53.3	0.1%	185.3	0.3%	105.2	0.1%
Capelin roe	0.0	0.0%	149.6	0.3%	323.2	0.6%	254.5	0.4%
Saltfish processing	9,166.8	22.1%	9,492.8	21.0%	10,310.0	17.7%	12,630.7	17.6%
Uncured saltfish and strips	8,406.3	20.3%	8,743.7	19.4%	9,238.6	15.8%	11,495.8	16.1%
Dried saltfish	217.7	0.5%	296.4	0.7%	458.6	0.8%	423.1	0.6%
Roe	336.0	0.8%	312.2	0.7%	458.8	0.8%	525.4	0.7%
Lumpfish roe	206.8	0.5%	140.5	0.3%	154.0	0.3%	186.4	0.3%
Stockfish processing	1,203.7	2.9%	717.3	1.6%	1,252.4	2.1%	1,253.8	1.8%
Stockfish	1,082.1	2.6%	577.1	1.3%	945.3	1.6%	742.5	1.0%
Heads	121.6	0.3%	140.2	0.3%	307.1	0.5%	511.3	0.7%
Herring salted	837.3	2.0%	1,058.5	2.3%	1,246.4	2.1%	1,520.6	2.1%
Meal- and fish oil processing	2,739.4	6.6%	4,854.3	10.8%	4,708.2	8.1%	4,153.4	5.8%
Meal	2,204.4	5.3%	3,691.4	8.2%	3,932.9	6.7%	3,369.3	4.7%
Fish oil	535.0	1.3%	1,162.9	2.6%	775.3	1.3%	784.1	1.1%
Liver oil	198.1	0.5%	188.8	0.4%	223.8	0.4%	231.2	0.3%
New and ice-preserved fish	4,915.5	11.9%	5,958.4	13.2%	8,908.4	15.3%	11,987.0	16.7%
Demersal species	4,915.5	11.9%	5,958.4	13.2%	8,908.4	15.3%	11,987.0	16.7%
Herring and capelin	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Fish products in airtight containers	1,113.2	2.7%	1,332.2	3.0%	1,493.8	2.6%	1,714.0	2.4%
Whale processing	301.7	0.7%	21.1	0.0%	0.0	0.0%	264.0	0.4%
Other	159.8	0.4%	277.1	0.6%	708.5	1.2%	256.5	0.4%

Source:

Appendix 3.19.

Export of fish- meal and oil by type of products at 1982

(Thousands of tonnes and thousands of ISK)

	1982 tonnes	%	1982 value	%
Total production	102,461		382	
Cod liver oil for human consumption	1,469	3.7%	20,173	14.4%
Cod liver oil for animal feeds	860	2.1%	6,579	4.7%
Herring oil	163	0.4%	504	0.4%
Capelin oil	33,984	84.7%	99,331	71.0%
Redfish oil	1,058	2.6%	3,823	2.7%
Whale oil	1,667	4.2%	5,708	4.1%
Other fish oil	908	2.3%	3,782	2.7%
Total exports fish oil	40,108	100.0%	139,900	100.0%
Cod meal	23,486	36.0%	92,230	36.7%
Norway pout meal	201	0.3%	811	0.3%
Herring meal	31	0.0%	111	0.0%
Capelin meal	27,300	41.9%	105,708	42.1%
Redfish meal	10,760	16.5%	42,726	17.0%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	93	0.1%	328	0.1%
Shrimp meal	0	0.0%	0	0.0%
Whale meal	1,201	1.8%	3,265	1.3%
Fishmeal	1,397	2.1%	5,375	2.1%
Fish offal for animal feeding	705	1.1%	746	0.3%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	65,171	100.0%	251,300	100.0%
Total export	105,279		391,200	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of fish- meal and oil by type of products at 1983

(Thousands of tonnes and thousands of ISK)

	1983 tonnes	%	1983 value	%
Total production	51,540		466	
Cod liver oil for human consumption	1,557	18.0%	34,336	41.2%
Cod liver oil for animal feeds	1,556	18.0%	17,292	20.8%
Herring oil	1,581	18.2%	7,913	9.5%
Capelin oil	55	0.6%	201	0.2%
Redfish oil	3,346	38.6%	20,164	24.2%
Whale oil	0	0.0%	0	0.0%
Other body oil	567	6.5%	3,389	4.1%
Total exports fish oil	8,662	100.0%	83,295	100.0%
Cod meal	28,230	58.1%	237,143	55.2%
Norway pout meal	711	1.5%	8,906	2.1%
Herring meal	664	1.4%	5,193	1.2%
Capelin meal	3,170	6.5%	42,259	9.8%
Redfish meal	8,810	18.1%	79,057	18.4%
Catfish meal	65	0.1%	495	0.1%
Cod liver meal	273	0.6%	2,347	0.5%
Shrimp meal	2	0.0%	16	0.0%
Whale meal	1,520	3.1%	11,000	2.6%
Fishmeal	5,102	10.5%	41,931	9.8%
Fish offal for animal feeding	56	0.1%	1,451	0.3%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	48,602	100.0%	429,798	100.0%
Total export	57,264		513,093	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991
 Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur: 1989,90,91, Fiskifélag Íslands

Export of fish- meal and oil by type of products at 1984

(Thousands of tonnes and thousands of ISK)

	1984 tonnes	%	1984 value	%
Total production	194,903		2,231	
Cod liver oil for human consumption	2,124	3.5%	51,460	7.5%
Cod liver oil for animal feeds	1,641	2.7%	26,564	3.9%
Herring oil	413	0.7%	4,732	0.7%
Capelin oil	53,895	89.9%	579,966	85.0%
Redfish oil	1,535	2.6%	16,372	2.4%
Whale oil	0	0.0%	0	0.0%
Other body oil	339	0.6%	3,179	0.5%
Total exports fish oil	59,947	100.0%	682,273	100.0%
Cod meal	14,621	10.6%	152,327	9.6%
Norway pout meal	0	0.0%	0	0.0%
Herring meal	358	0.3%	4,454	0.3%
Capelin meal	114,045	82.4%	1,335,783	84.1%
Redfish meal	5,741	4.1%	54,244	3.4%
Catfish meal	95	0.1%	1,081	0.1%
Cod liver meal	94	0.1%	1,270	0.1%
Shrimp meal	1	0.0%	11	0.0%
Whale meal	0	0.0%	0	0.0%
Fishmeal	3,511	2.5%	39,280	2.5%
Fish offal for animal feeding	6	0.0%	5	0.0%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	138,470	100.0%	1,588,455	100.0%
Total export	198,417		2,270,728	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur: 1989,90,91, Fiskifélag Íslands

Export of fish- meal and oil by type of products at 1985

(Thousands of tonnes and thousands of ISK)

	1985 tonnes	%	1985 value	%
Total production	287,620		3,498	
Cod liver oil for human consumption	1,470	1.2%	55,800	3.8%
Cod liver oil for animal feeds	758	0.6%	16,864	1.1%
Herring oil	110	0.1%	1,224	0.1%
Capelin oil	122,425	96.7%	1,372,154	93.4%
Redfish oil	430	0.3%	4,814	0.3%
Whale oil	1,399	1.1%	18,381	1.3%
Other body oil	0	0.0%	0	0.0%
Total exports fish oil	126,591	100.0%	1,469,237	100.0%
Cod meal	14,553	9.0%	163,998	7.9%
Norway pout meal	0	0.0%	0	0.0%
Herring meal	191	0.1%	2,440	0.1%
Capelin meal	143,580	88.9%	1,838,146	88.5%
Redfish meal	1,556	1.0%	16,243	0.8%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	66	0.0%	1,220	0.1%
Shrimp meal	0	0.0%	0	0.0%
Whale meal	1,081	0.7%	6,881	0.3%
Fishmeal	506	0.3%	47,669	2.3%
Fish offal for animal feeding	45	0.0%	206	0.0%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	161,579	100.0%	2,076,803	100.0%
Total export	288,170		3,546,040	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of fish- meal and oil by type of products at 1986

(Thousands of tonnes and thousands of ISK)

	1986 tonnes	%	1986 value	%
Total production	292,464		3,709	
Cod liver oil for human consumption	2,446	2.4%	116,573	11.2%
Cod liver oil for animal feeds	492	0.5%	14,029	1.4%
Herring oil	248	0.2%	2,937	0.3%
Capelin oil	96,629	95.8%	887,588	85.6%
Redfish oil	0	0.0%	0	0.0%
Whale oil	1,039	1.0%	15,358	1.5%
Other body oil	3	0.0%	49	0.0%
Total exports fish oil	100,856	100.0%	1,036,534	100.0%
Cod meal	25,236	13.2%	317,508	11.9%
Norway pout meal	0	0.0%	0	0.0%
Herring meal	127	0.1%	1,853	0.1%
Capelin meal	165,093	86.1%	2,338,717	87.5%
Redfish meal	1,085	0.6%	12,764	0.5%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	52	0.0%	1,125	0.0%
Shrimp meal	23	0.0%	397	0.0%
Whale meal	0	0.0%	0	0.0%
Fishmeal	105	0.1%	997	0.0%
Fish offal for animal feeding	0	0.0%	0	0.0%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	191,720	100.0%	2,673,361	100.0%
Total export	292,576		3,709,895	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of fish- meal and oil by type of products at 1987

(Thousands of tonnes and thousands of ISK)

	1987 tonnes	%	1987 value	%
Total production	232,758		2,976	
Cod liver oil for human consumption	2,506	3.0%	190,524	25.4%
Cod liver oil for animal feeds	264	0.3%	7,863	1.0%
Herring oil	0	0.0%	0	0.0%
Capelin oil	79,187	96.0%	534,955	71.3%
Redfish oil	240	0.3%	1,551	0.2%
Whale oil	0	0.0%	0	0.0%
Other body oil	256	0.3%	15,822	2.1%
Total exports fish oil	82,452	100.0%	750,715	100.0%
Cod meal	17,894	11.7%	246,210	10.9%
Norway pout meal	200	0.1%	2,719	0.1%
Herring meal	483	0.3%	7,163	0.3%
Capelin meal	131,077	85.9%	1,958,316	86.9%
Redfish meal	592	0.4%	7,557	0.3%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	222	0.1%	4,682	0.2%
Shrimp meal	24	0.0%	403	0.0%
Whale meal	0	0.0%	0	0.0%
Fishmeal	1,853	1.2%	25,319	1.1%
Fish offal for animal feeding	222	0.1%	1,595	0.1%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	152,567	100.0%	2,253,964	100.0%
Total export	235,019		3,004,679	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur: 1989,90,91, Fiskifélag Íslands

Export of fish- oil and meal by type of products at 1988

(Thousands of tonnes and thousands of ISK)

	1988 tonnes	%	1988 value	%
Total production	276,816		5,050	
Cod liver oil for human consumption	1,357	1.3%	176,016	12.9%
Cod liver oil for animal feeds	161	0.2%	12,840	0.9%
Herring oil	409	0.4%	5,848	0.4%
Capelin oil	99,342	97.9%	1,162,858	85.5%
Redfish oil	0	0.0%	0	0.0%
Whale oil	0	0.0%	0	0.0%
Other body oil	194	0.2%	2,301	0.2%
Total exports fish oil	101,464	100.0%	1,359,863	100.0%
Cod meal	20,065	11.3%	461,365	12.4%
Norway pout meal	0	0.0%	0	0.0%
Herring meal	807	0.5%	14,296	0.4%
Capelin meal	155,891	87.8%	3,237,277	87.0%
Redfish meal	0	0.0%	0	0.0%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	83	0.0%	1,831	0.0%
Shrimp meal	6	0.0%	133	0.0%
Whale meal	0	0.0%	0	0.0%
Fishmeal	0	0.0%	0	0.0%
Fish offal for animal feeding	696	0.4%	4,486	0.1%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	177,547	100.0%	3,719,388	100.0%
Total export	279,012		5,079,251	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verzlunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of frozen fish by type of products at 1989

(Thousands of tonnes and thousands of ISK)

	1989 tonnes	%	1989 value	%
Total production	185,880		4,932	
Cod liver oil for human consumption	1,005	1.8%	193,826	19.0%
Cod liver oil for animal feeds	263	0.5%	29,944	2.9%
Herring oil	1,527	2.7%	21,885	2.1%
Capelin oil	53,696	95.1%	775,279	75.9%
Redfish oil	0	0.0%	0	0.0%
Whale oil	0	0.0%	0	0.0%
Other body oil	0	0.0%	0	0.0%
Total exports fish oil	56,490	100.0%	1,020,934	100.0%
Cod meal	12,929	9.4%	329,826	8.0%
Norway pout meal	0	0.0%	0	0.0%
Herring meal	5,177	3.8%	153,275	3.7%
Capelin meal	117,987	86.1%	3,603,090	87.5%
Redfish meal	0	0.0%	0	0.0%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	31	0.0%	995	0.0%
Shrimp meal	99	0.1%	2,846	0.1%
Whale meal	0	0.0%	0	0.0%
Fishmeal	0	0.0%	0	0.0%
Fish offal for animal feeding	822	0.6%	25,653	0.6%
Fish feeds	0	0.0%	0	0.0%
Total exports fish meal	137,045	100.0%	4,115,685	100.0%
Total export	193,536		5,136,619	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Febrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of fish- meal and oil by type of products at 1990

(Thousands of tonnes and thousands of ISK)

	1990 tonnes	%	1990 value	%
Total production	199,090		5,124	
Cod liver oil for human consumption	1,324	1.9%	219,859	17.6%
Cod liver oil for animal feeds	123	0.2%	11,308	0.9%
Herring oil	2,277	3.3%	27,934	2.2%
Capelin oil	62,986	91.7%	784,050	62.9%
Redfish oil	351	0.5%	6,157	0.5%
Whale oil	0	0.0%	0	0.0%
Other body oil	1,629	2.4%	197,833	15.9%
Total exports fish oil	68,690	100.0%	1,247,141	100.0%
Cod meal	10,170	7.5%	225,644	5.4%
Norway pout meal	0	0.0%	0	0.0%
Herring meal	656	0.5%	17,357	0.4%
Capelin meal	112,218	82.2%	3,143,673	75.5%
Redfish meal	0	0.0%	0	0.0%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	63	0.0%	2,766	0.1%
Shrimp meal	0	0.0%	0	0.0%
Whale meal	0	0.0%	0	0.0%
Fishmeal	998	0.7%	19,824	0.5%
Fish offal for animal feeding	124	0.1%	15,135	0.4%
Fish feeds	12,268	9.0%	739,668	17.8%
Total exports fish meal	136,496	100.0%	4,164,067	100.0%
Total export	205,186		5,411,208	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verslunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands

Export of fish- meal and oil by type of products at 1991

(Thousands of tonnes and thousands of ISK)

	1991 tonnes	%	1991 values	%
Total production	99,624		2,829	
Cod liver oil for human consumption	1,218	3.8%	182,849	25.9%
Cod liver oil for animal feeds	546	1.7%	21,361	3.0%
Herring oil	1,650	5.1%	25,440	3.6%
Capelin oil	28,497	88.3%	467,512	66.3%
Redfish oil	351	1.1%	6,157	0.9%
Whale oil	0	0.0%	0	0.0%
Other body oil	21	0.1%	1,630	0.2%
Total exports fish oil	32,283	100.0%	704,949	100.0%
Cod meal	18,018	23.5%	430,262	18.2%
Norway pout meal	0	0.0%	0	0.0%
Herring meal	4,981	6.5%	156,221	6.6%
Capelin meal	43,096	56.3%	1,270,165	53.7%
Redfish meal	0	0.0%	0	0.0%
Catfish meal	0	0.0%	0	0.0%
Cod liver meal	55	0.1%	2,173	0.1%
Shrimp meal	0	0.0%	0	0.0%
Whale meal	0	0.0%	0	0.0%
Fishmeal	2,055	2.7%	46,897	2.0%
Fish offal for animal feeding	82	0.1%	2,413	0.1%
Fish feeds	8,252	10.8%	456,912	19.3%
Total exports fish meal	76,540	100.0%	2,365,043	100.0%
Total export	108,823		3,069,992	

Source: Sögulegt yfirlit hagtalna 1945-1988, Þjóðhagsstofnun, Fegrúar 1991

Verzlunarskýrslur: 1989,1990, Hagstofa Íslands. Útvegur:1989,90,91, Fiskifélag Íslands