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Iceland can consider its participation in the European Economic Area (EEA) as an associate membership of the European Union (EU). Under the EEA agreement, Iceland participates in the EU free movement of capital, persons, services and industrial goods, along with cooperation in social policy and related fields. However, Iceland does not participate in the EU Common Fisheries Policy (CFP), the EU Common Agricultural Policy (CAP), the European Economic and Monetary Union (EMU), or in the EU Customs Union.

This dissertation studies the effects of full EU membership on Iceland's Political Economy. It gives an overview of the EU, EEA and the European Free Trade Association (EFTA), offering thorough analyses of the EMU, Agricultural Policy and Fisheries Policy. The dissertation also reviews the pros and cons of EU membership. A decision to join the EU is in the end a question of political choice and this dissertation is intended to make such a choice as informed as possible.

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The Political Economy of Joining the European Union Magnus Bjarnason

The Political Economy of Joining the European Union

Iceland's Position at the Beginning of the 21st Century

MAGNUS BJARNASON

University of Amsterdam

The Political Economy of Joining the European Union

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Iceland's Position at the Beginning of the 21st Century

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List of Abbreviations

APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of South East Asian Nations
AT	Austria
BE	Belgium
BG	Bulgaria
Billion	In this document used for Thousand Millions = 10^9 = 1 000 000 000
BLIM	Biomass Limit
Bpa	Biomass precautionary approach
CAP	Common Agricultural Policy (in the context of EU CAP)
CEFTA	Central European Free Trade Agreement
CFP	Common Fisheries Policy (in the context of EU CFP)
CFSP	Common Foreign and Security Policy
CIA	Central Intelligence Agency (US Government agency)
CIF	Cost Insurance Freight
CNNI	Cable News Network International
CSE	Consumer Support Estimate / Consumer Subsidy Equivalent
CU	Customs Union
CY	Cyprus
CZ	Czech Republic
DE	Germany
DG	Directorate General (in the European Commission)
DK	Denmark
EAFRD	European Agricultural Fund for Rural Development
EAGF	European Agricultural Guarantee Fund
EAGGF	European Agricultural Guidance and Guarantee Fund
EC	European Commission / European Communities
ECSC	European Coal and Steel Community
ECU	European Currency Unit (the forerunner to the Euro)
EE	Estonia
EEA	European Economic Area
EEC	European Economic Community
EFF	European Fisheries Fund
EFTA	European Free Trade Association
EIB	European Investment Bank
EL	Greece
EMU	Economic and Monetary Union / European Monetary Union

ERDF	European Regional Development Fund
ES	Spain
ESF	European Social Fund
EU	European Union
EURATOM	European Atomic Energy Community
FAO	Food and Agricultural Organisation (United Nations Agency)
FDI	Foreign Direct Investment
FI	Finland
FIFG	Financial Instrument for Fisheries Guidance
FLIM	Fishing mortality limit
FOB	Free On Board
Fpa	Fishing rate precautionary approach
FR	France
FTA	Free Trade Area / Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GDR	German Democratic Republic (official name of former communist East Germany, DDR in German, Deutsche Demokratische Republik)
GOSPLAN	Gosudarstvennyi Komitet po Planirovaniyu (State Committee for Planning, in the former Soviet Union)
GNI	Gross National Income
GNP	Gross National Product
GSSE	General Services Support Estimate / General Services Subsidy Equivalent
HR	Croatia
HU	Hungary
ICES	International Council for the Exploration of the Sea
IE	Ireland
IMF	International Monetary Fund
IS	Iceland
ISK	Icelandic Krona
IT	Italy
ITQ	Individually Transferable Quota
KW	Kilowatt
LDC	Less Developed Country
LT	Lithuania
LU	Luxembourg
LV	Latvia

MAGP	Multi-Annual Guidance Program
MERCOSUR	El Mercado Común del Sur (The Common Market of the South (South America)).
MK	Macedonia
MT	Malta
NAFTA	North American Free Trade Agreement
NEI	National Economic Institute (of Iceland)
NL	Netherlands
NO	Norway
NUPI	Norsk Utenrikspolitisk Institutt (Norwegian Institute of International Affairs)
OECD	Organisation for Economic Cooperation and Development
OPEC	Organisation of Petroleum Exporting Countries
pa	precautionary approach
PL	Poland
PPP	Purchasing Power Parity
PSE	Producer Support Estimate / Producer Subsidy Equivalent
PT	Portugal
RO	Romania
SE	Sweden
SI	Slovenia
SK	Slovakia
SSB	Spawning Stock Biomass
TAC	Total Allowable Catches
TARIC	Tarif Intégré Communautaire (Integrated (Customs) Tariff of the European Communities)
TR	Turkey
TSE	Total Support Estimate / Total Subsidy Equivalent
UK	United Kingdom
UN	United Nations (United Nations Organisation)
USA	United States of America
USD	United States Dollar
USDA	United States Department of Agriculture
VAT	Value Added Tax
VPA	Virtual Population Analysis
WCO	World Customs Organisation
WHO	World Health Organisation
WTO	World Trade Organisation

Acknowledgements

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Brussels,
Spring of 2010,
Magnus Bjarnason

Preface

Political economy is a multidisciplinary subject drawing upon economics, business, political science, law, sociology and other related disciplines. Studies of political economy analyse options governments have to choose from in order to achieve economic ends. The term political economy appears for the first time in 1615, when Antoine de Montchrestien wrote "*Traicté de l'œconomie politique"* (Treaty of the Political Economy). Up until one century ago many academic institutions studied politics and economics in the same department. Eventually academic specialisation separated political science from economics. Contemporary political science focuses on political theory and practice, along with political behaviour, and modern economics has developed into an increasingly technical subject using mathematics and statistics to analyse and explain economic behaviour. Political economy may be considered as an interdisciplinary study, but perhaps it is better to look at it as a revival of an old discipline, which was made famous in 1776 when Adam Smith published "*An Inquiry into the Nature and Causes of the Wealth of Nations"*, and more recently by Karl Marx with several volumes published in the late 19th century under the title *"Das Kapital. Kritik der politischen Oekonomie."* (The Capital. A Critic of the Political Economy). The different views of many political economists show that political economy, as a human science, is often influenced by the opinions of its proponents. Political economy cannot be an exact science, but is a mixture of humanities and empirical sciences. In recent years there has been increased interest in the study of political economy in its broadest sense. This has included various studies where business, economics, politics and policy choices meet. Modern examples of studies of political economy include subjects as diverse as health, changing global order, college sports, hunger, monetary unions, market reforms and democratisation, to name but a few.

This study deals with the effects of European Union membership on Iceland. The European Union is a typical subject that crosses many individual disciplines. During the first seven years of this century the economy of Iceland was in an upswing. When the going is good, there is little need to look at alternative options and the Icelandic government had limited interest in European Union membership. However, all economic upswings end with a downturn. Luckily, most economic downturns are usually shorter and shallower than the upswings. In 2008 the unavoidable Icelandic downturn started, and not surprisingly, the discussion in Iceland

about alternative economic options increased substantially. Currently, the Icelandic media regularly publish various political and economic statements for and against European Union membership.

We want to emphasize that this study is a general assessment of the long-term consequences of European Union membership. It is not intended a contemporary political paper. The European Union is a political dwarf in the international arena, but it is an economic superpower. Many Icelandic voices that were silent during the economic upswing are now asking if joining the European Union would be a good choice for Iceland. Let there be no doubt that joining the European Union is not a quick fix for all economic ailments, which can be seen by how it takes several years for new Union members in Eastern Europe and the Mediterranean to improve their economies. Many new member states are not yet in a position to fulfil the criteria to adopt the Euro as their currency, despite their intentions. Nevertheless, there is little doubt that many of the new members have or will benefit substantially from Union membership, which can be seen by surprisingly fast progress in many of those countries.

There are many opinions on various aspects of EU membership, but so far there have been very limited attempts to build a complete picture of the effects of Icelandic EU membership. This study gives a thorough survey of the main policies affected by moving from the current European Economic Area arrangement to full EU membership. It estimates the effects of the European Economic and Monetary Union and the effects of EU's Common Agricultural Policy (CAP) on Iceland, and shows that there are feasible political options for Iceland to safeguard fish stocks from EU's Common Fisheries Policy's (CFP) overexploitation.

The first part of this study describes the European Union, European Economic Area, European Free Trade Association, and Iceland. The chapters that follow go further and analyse the various aspects and arguments for and against Union membership. Many aspects of European Union membership have already been estimated, but in some cases previous studies have shown very divergent findings, e.g. on monetary unions or deadweight losses from agricultural support measures. In such cases, rather than adding just another new opinion, we show the trend, but often there is no known exact answer. Although the bottom line of this study is along the lines of a cost-benefit analysis, which includes identifying factors, analysing them and adding up the balance, we should point out that joining the European Union is in the end a political decision. Nobody can predict the future with 100% certainty, but decisions should always be made on the best available knowledge at the time. We

sincerely hope that the different aspects presented in this study will help the reader make up his or her own mind on Icelandic accession to the European Union.

***

1. Introduction

The subject of this study is to look at the changes that would likely take place in the Icelandic political economy[1] if Iceland became a member of the European Union (EU). Iceland did not apply for EU membership until mid-2009 and accession negotiations will start in 2010 at the earliest.[2] Hesitating to join the EU is unusual amongst European nations. It is only recently that EU membership has been seriously debated in Icelandic politics. The European Union is steadily growing and currently encompasses 27 European states, which all see an advantage of EU membership. For those very few European states that are not EU members, it can be explained by various reasons. There is an economic case, such as when Greenland left the EU by its own choice because of the European Common Fisheries Policy (CFP). There is the political case, such as Switzerland, which turned down EU membership, as it would compromise its sovereignty and independence. There is the social case when former communist and non-democratic countries, such as Croatia and Macedonia, or islamic countries such as Turkey, are not yet deemed ready for EU membership by the Union itself.

What are the Icelandic reasons for not being a EU member? Iceland has been a member of the European Free Trade Association (EFTA) since 1970 and the European Economic Area (EEA) since 1994. The EEA includes the EU and EFTA, except Switzerland. Under the EEA agreement Iceland participates in the EU Common Market with a (almost) free flow of capital, goods, services and people. However, the EEA does not provide for participation in the Economic and Monetary Union (EMU), Customs Union, Agricultural Policy or Fisheries Policy. If Iceland became a EU member, it is expected that Iceland would adopt these EU policies, which would indeed have some significant economic consequences for the country.

Our methodology is to look at the differences between the EFTA-EEA arrangement and full EU membership. The central question we look at is what influence will the EU policies that are not covered by the EEA agreement have in Iceland? Will there be a positive or negative macroeconomic effect? We survey the literature on the EU, monetary unions, agriculture and fisheries. The main question is broken into sub-

[1] "Political Economy" is explained in the Preface.
[2] For most European states, accession negotiations were a one to five year process (see e.g. Arnorsson 2009).

themes, which are then added up in our overall estimate of the effects of EU membership. In chapter two we give a historical overview of the EU, EFTA, EEA, and Iceland. Chapter three reviews the policy and the political, social, and economic debate on EU affairs. Chapter four discusses the influence of EU membership on the Icelandic government finances, effects of the Customs Union, and eventual other economic effects. Chapters five, six, and seven, break the central question into the sub-questions and discuss respectively the Economic and Monetary Union (EMU and the Euro), Agricultural Policy, and Fisheries Policy. The Economic and Monetary Union analysed in chapter five, studies the literature arguing for and against monetary unions and ideal currency areas. In that part we study the criteria to join the European Economic and Monetary Union and finally look at to what extent Iceland fulfils those criteria and what benefits or costs it might bring. Chapter six on agricultural policies recalls principles in agricultural economics and protection of the food production industry. It gives a detailed overview of agricultural policies in Iceland and the EU, compares them and assesses what change the EU Common Agricultural Policy (CAP) might have on Icelandic economics. Chapter seven on fisheries management explains the fundamentals of sustainable fisheries in the high seas. It compares the Icelandic fisheries policy to the EU fisheries policy, which indeed differs substantially and could be an obstacle in Icelandic EU accession negotiations. Chapter eight adds up and summarizes the advantages and disadvantages of EU membership, including the macroeconomic effect on Icelandic society. This includes the effects of the EMU, EU's Common Agricultural and Fisheries Policies, the EU Customs Union, and direct expenses for the state treasury linked to EU membership.

EU membership is a political, economic, social and cultural issue. Our focus is primarily on the political-economic part and this study focuses on policy comparison between EU and Iceland, and cost-benefit estimates. Nevertheless, the decision on joining the EU is more than just a cost-benefit analysis, although a knowledge of the costs and benefits are helpful in the decision making process.[3] In the case of new entrants to the EU, it is a question of accepting the whole package (Acquis

[3] Essentials of a cost-benefit analysis are to identify the factors, evaluate and estimate their influence, compare the options, and select the "best". Although most literature on cost-benefit analysis uses monetary units as a measurement of welfare, some factors are very subjective and cannot be measured in monetary terms, e.g. what constitutes an ugly or beautiful object or landscape. In EU context, the psychological issue of being "European" or being from an "independent nation" has no measurable value.

Communautaire) with its advantages and obligations. We therefore identify, discuss and compare the relevant EU and Icelandic policies, but Iceland would most likely not be in a position to select just those policies it would find suitable, as was the case with the EEA agreement.

The numerical data used in this study is mainly from the European Commission, EFTA, Statistics Iceland, National Economic Institute of Iceland (recently closed and divided between Statistics Iceland and the Icelandic Central Bank), Organisation for Economic Cooperation and Development (OECD), and various government agencies and ministries. The policy and political discussion draws on a wide array of sources, most from the academic world, but also from politicians and bureaucrats. This includes articles in professional journals, classical books on options in policy development, e.g. agriculture, and contemporary political and policy overviews (detailed in the bibliography). The theoretical background has its roots in mainstream economics. This includes that trade increases net welfare, and vice versa that trade barriers reduce net welfare, and that competition contributes to lower prices and reduces redundancy in production. Nevertheless, the part on agriculture refers to many arguments for government interventionism and protectionism, which is widely practised in the modern world, but often criticized by modern economists because of the economic waste it generates.

There is a tremendous amount of literature available on the EU and its affairs. However, there exists rather limited academic literature on the EEA per se, perhaps because for most EFTA members, the EEA was only a stepping-stone on the way to EU membership. Many EFTA states appear to have looked at the EEA as an adaptation period or as a test of some of the advantages (or possible disadvantages) from EU membership, without jumping straight into full membership, which could have met opposition from politicians and citizens. Consequently, for most former EFTA states, the EEA is more related to political-economic history than actual new EU association or new membership. Nevertheless, there is a reasonable number of facts and figures available on the EFTA states and on Iceland, along with some academic discussion on EU association agreements, EFTA as an organisation in general, customs unions, free trade areas and monetary unions. This limited academic interest in the future of the EEA is possibly also because the EU is not willing to elaborate further on the idea of an EEA. The EU prefers either membership applications and/or association agreements with individual states. For the remaining four EFTA members that have not yet left EFTA and joined the EU, Norway has had its eyes on the EU with a

history of two EU applications, both narrowly rejected in national referendums, Switzerland opted out of both the EU and the EEA, and Liechtenstein has never applied for Union membership. Iceland intends to bring its still un-negotiated accession treaty up for a national referendum. At this stage it is not possible to forecast the results.

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2. Historical Overview

2 – 1 The European Union (EU)

The EU has its roots in the political and economic turmoil following the Second World War in Europe. The idea was that only through mutual integration would it be possible to avoid future intra-European conflicts. As such, the political agenda was already laid out in the early years and today it is very hard to imagine an armed conflict between EU member states. The EU has developed through the years with ever increasing cooperation amongst its members. It started with the creation of the European Coal and Steel Community (ECSC), which was founded in 1951 (Treaty of Paris), by Belgium, France, Italy, Luxembourg, the Netherlands and West Germany, to pool the steel and coal resources of its member-states. The main idea at the time was to prevent Franco-German tensions to flourish again, thus preventing another European war.

The Treaty of Rome was signed in 1957, creating the European Economic Community (EEC), unofficially known as “the Common Market" and the European Atomic Energy Community (EURATOM). In 1967 the ECSC, EEC and EURATOM were merged into the European Community with its corresponding bodies: the European Commission, the European Council of Ministers, and the European Parliament. The name European Union was adopted in 1992 by the signing of the Treaty of Maastricht.

Through the years, most European countries have shown interest in joining the European Union. The EU has had several enlargements from the original 6 states of Belgium, France, Italy, Luxembourg, the Netherlands and West Germany, adding Denmark, Ireland and the United Kingdom in 1973, Greece in 1981, Portugal and Spain in 1986, Austria, Finland and Sweden in 1995, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia in 2004, and Bulgaria and Romania in 2007. Croatia, Macedonia and Turkey are candidate countries, although Turkey still has some obstacles to overcome. We cannot project the future, but we anticipate that Albania, Bosnia, Montenegro and Serbia may become members at some future date. The government of the Ukraine has also expressed interest in increased relations with the EU. Figure 1 on next page shows the geographical extension of the EU as of 2007.

Figure 1. Map of the European Union showing member states and candidate countries[4] in 2007

Source: Foreign and Commonwealth Office, United Kingdom, 2008.

The cooperation between EU member states has deepened from being just economic cooperation to increased political harmonisation, including new forms of co-operation between member states' governments in justice and home affairs. The development of a common foreign and security policy has started and many member states have adopted the same currency, the Euro.

[4] A candidate country is a country where accession negotiations have already started.

The customs union, economic and monetary union, and harmonisation of markets and regulations, has dismantled many internal European trade barriers. Although the EU has now 27 independent member states, it has more or less achieved a free flow of capital and goods. In principle there is also a free movement of persons and services, but the EU has still some obstacles to overcome in order to fully implement that goal. It is also worth noting that some EU regulations are supranational, where member states are obliged to adopt them into their national legislation. The supranational authority of the EU governing bodies is unique amongst multinational organisations.

2 – 2 The European Free Trade Association (EFTA)

The European Free Trade Association (EFTA) is less well known than the EU. Nevertheless it became one of the two pillars of the European Economic Area (EEA), the EU being the other pillar. EFTA is an international organisation established with the Stockholm Convention on the 4th of January 1960. The agreement entered into force on the 3rd of May 1960. The original EFTA members were Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom. Iceland became an EFTA member on 1st March 1970[5]. Finland acceded to EFTA on 1st January 1986[6] and Liechtenstein acceded on 1st September 1991[7]. But as the European Economic Community (EEC)[8] grew bigger, EFTA lost out. Denmark and the United Kingdom withdrew from EFTA on 1st January 1973, Portugal withdrew on 1st January 1986, and Austria, Finland and Sweden withdrew with effect from 1st January 1995. Those states who withdrew from the Stockholm Convention all became EEC / EU members[9]. Since 1995 EFTA comprises only four states, Iceland, Liechtenstein, Norway and Switzerland. With the exception of Switzerland and Liechtenstein, EFTA as it is today does not have contiguous states.

As the name implies, EFTA is a free trade association. The members have eliminated barriers among themselves for industrial products, but unlike a customs union, they do not have a common external tariff. In 2001, the agreement now referred to just as the EFTA convention, was amended to better reflect upon the co-operation already in force since 1994 under the Agreement on the European Economic Area, and the bilateral agreements between Switzerland and the European Union, following Swiss failures to ratify both the EEA agreement and EU membership. This amendment included, amongst other, provisions for free movement of persons, investments, services and transport. Currently those EFTA states that are also EEA members, participate in principle in the EU system of free movement of persons, capital, goods and services, although they are not a part of EU's Customs Union with a common

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[5] EFTA Council Decision No. 17 of 1969.
[6] EFTA Council Decision No. 7 of 1985
[7] EFTA Council Decision No. 2 of 1991
[8] The forerunner to the current EU.
[9] When the United Kingdom left EFTA in 1973, being its largest member by far, it can be said that the bottom basically fell out, even though the other member states were still there.

external tariff. Another difference between EU membership and the EFTA-EEA membership is that the EFTA states do not participate in the EU's Common Agricultural Policy (CAP) and Common Fisheries Policy (CFP).

The activities of EFTA can be divided into three main areas. Firstly, the monitoring and management of relationships between the EFTA states on the basis of the EFTA Convention, (previously the Stockholm Convention), which is the legal basis of the association. Secondly, in line with the broad objectives of the Convention, EFTA has developed relations with a large number of non-EU countries, usually referred to as third country relations. Thirdly, three of the four member states, Iceland, Liechtenstein and Norway, have structured their relations with the EU in the form of the Agreement on the European Economic Area (EEA), through which they participate in the EU Single Market.

The EFTA Council is the governing body of the Association, with responsibility for all non-EEA matters concerning relations between the EFTA states, matters concerning relations with third countries and common administrative matters. The Standing Committee of the EFTA states is the forum on decision-making, administration and management of the EEA agreement's EFTA side. Sub-committees, working groups and advisory committees assist the Standing Committee in communication with social partners and EFTA states' parliaments.

The total population of the EFTA states is only 12.5 million, where of 7.5 million live in Switzerland and 4.5 million in Norway. Comparing this to almost 500 million in the European Union, EFTA is a dwarf. Nevertheless, a dwarf can be strong compared to its size. In 2005 EFTA GDP was 548 billion[10] Euros, or approximately 45 000 Euros per capita[11]. EFTA has the highest export per capita ratio of all major regional groupings in the world, e.g. over 15 000 Euros per capita in 2005. The average unemployment was 4% or about half the EU average unemployment (Figure 2 on next page) and the average inflation was less than 2% (2005 figures)[12]. In 2002 (when the Euro notes and coins were introduced) EFTA states gross government debt was 40% of GDP on the average, and in 1999 (the year of the Euro for accounting purposes) the

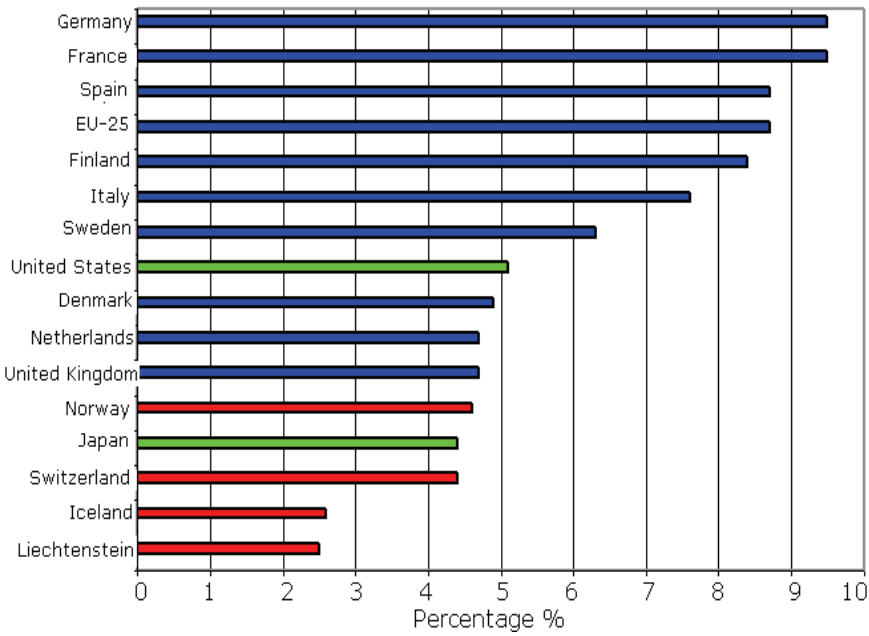
[10] Billion meaning thousand millions (1 000 000 000).

[11] In nominal terms. If using Purchasing Power Parity (PPP) the average figure is close to 33000 Euros and EU's average close to 23000 Euros.

[12] For the purpose of this study, we would like to draw attention to that in 2007 and 2008 the Icelandic inflation has been constantly over the EFTA average.

governments' financial balances ranged from minus 1.3% to plus 4.9% of GDP[13].

Figure 2. Unemployment rates in selected countries in 2005. EFTA states shown in red.[14]



Source: Eurostat. Data provided through EFTA.

EFTA has a large network of free trade agreements (FTAs), shown in Figure 3 on next page, which includes FTAs with Chile, Croatia, Egypt, Israel, Jordan, Lebanon, Macedonia, Mexico, Morocco, Palestinian Authority, Republic of Korea (South-Korea), Singapore, South African Customs Union, Tunisia, and Turkey. EFTA states have also bilateral FTA with the Faeroe Islands and the EU[15]. EFTA has also signed a

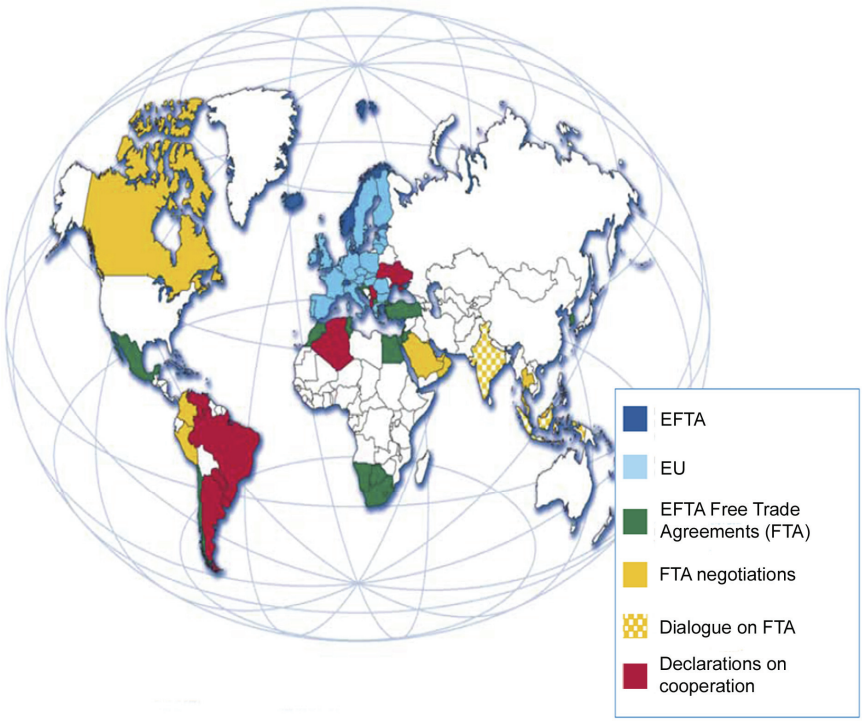
[13] The reader may find it interesting to compare this to the convergence criteria required to join the EMU, discussed in chapter five.

[14] After the implosion in 2008 of the 2000-2007 economic bubble in Iceland, where a part of the workforce was imported labor, the Icelandic unemployment is on the rise.

[15] Iceland and Norway have bilateral FTAs with the EU in addition to membership in the EEA. Switzerland's economic relations with the EU are regulated by a bilateral agreement that entered into force on 1 January 1973. Due to its customs union with Switzerland, Liechtenstein is covered by the Swiss–EU agreement in addition to its membership in the EEA.

declaration on co-operation with Albania, Algeria, Colombia, Gulf Cooperation Council[16], Peru, MERCOSUR[17], Serbia, and Ukraine.

Figure 3. EFTA Free Trade Agreements in 2007



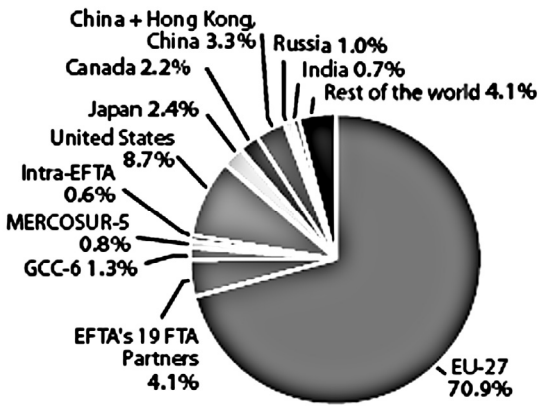
Source: EFTA (2007).

The EFTA states are amongst world leaders in chemicals, watches, machinery (Switzerland), financial services (Switzerland and Liechtenstein) fisheries, maritime transport (Norway and Iceland) and oil and gas export (Norway). In 2006, 70.9% of the EFTA states exports went to the EU and 8.7% went to the United States (Figure 4 on next page).[18] Furthermore, 75.2% of EFTA's imports came from the EU (Figure 5 on page 35).[19] In comparison, the EU's main exports in 2006

[16] Arab states of the Gulf.
[17] MERCOSUR, El Mercado Común del Sur (The Common Market of the South [South America]).
[18] Global Trade Atlas, data supplied through EFTA (2007/2008).
[19] Ibid.

went to the USA 23.3%, Russia 5.2%, China 4.8%, and EU's main imports in 2006 were from the USA 13.8%, China 13.4%, Russia 8.2%, and Japan 6.2%.[20] The EU's trade with EFTA (2006) was close to 12% of the Unions imports and exports. Considering the small size of the EFTA countries, the EU trade with EFTA is very high in per capita terms. Nevertheless, talking about EFTA's trade with the EU (Figure 4 below, and Figure 5 on next page) is somewhat academic as all the EFTA states except Switzerland participate in EU's Common Market, the only exceptions being fish and agricultural products which are dealt with under special provisions. As such, this is not an issue about opposing trade blocks, but more a question of different levels of economic integration into the European Common Market.

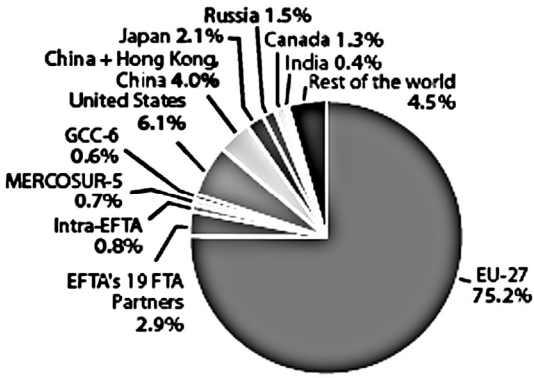
Figure 4. EFTA's main export destinations in 2006



Source: Global Trade Atlas, data supplied through EFTA.

[20] CIA World Factbook (September 2008).

Figure 5. EFTA's main import sources in 2006



Source: Global Trade Atlas, data supplied through EFTA.

As shown in Table 1 below, the Gross National Product (GNP) per capita in the EFTA states is high when compared to other regional groupings:

Table 1. Comparison of GDP per capita in regional organisations at the end of the 20th Century

EFTA[21]:	USD 33 503[22]
EU[23]:	USD 23 133 (Before the 2004/2007enlargement)
NAFTA[24]:	USD 18 107
APEC[25]:	USD 11 819
ASEAN[26]:	USD 7 729
MERCOSUR[27]:	USD 4 875
CEFTA[28]:	USD 4 293 (As CEFTA was in 1999. Since then the original CEFTA members have joined the EU, but new EU outsiders have joined CEFTA)
Andean Pact[29]:	USD 2 126

Source: World Bank 1999, data supplied through EFTA.

[21] EFTA, European Free Trade Association.
[22] EFTA's own estimate for 1999 is USD 35 436 and for 2002 USD 39 010.
[23] EU, European Union.
[24] NAFTA, North American Free Trade Agreement.
[25] APEC, Asia-Pacific Economic Cooperation.
[26] ASEAN, Association of South East Asian Nations.
[27] MERCOSUR, El Mercado Común del Sur (The Common Market of the South [South America]).
[28] CEFTA, Central European Free Trade Agreement.
[29] "Andean" refers to the Andes Mountains in South America.

Table 1 (on the previous page) should be seen as a historical guideline only. We have not seen it updated in an EFTA publication (as of this writing) in the format shown here. Recent GDP statistics are more commonly presented per country as many of the regional organisations listed have very limited economic integration (e.g. EFTA itself). Generalising about regional organisations can be misleading, e.g. as is the case of NAFTA where there is a big difference in the GDP per capita in the United States and in Mexico. We would also like to caution against uncritical comparison of GDP between Dollar and Euro-zones because of fluctuation in exchange rates. Furthermore, Table 1 is based on dollar comparison when Purchasing Power Parity (PPP) comparison is becoming more common. By using PPP, poorer countries often show a higher GDP per capita than in a pure dollar comparison, as prices on non-tradables and local services tend to be lower. Nevertheless, the fact remains that the EFTA members have a GDP per capita among the highest in the world regardless of how it is looked at or computed.

2 – 3 The European Economic Area (EEA)

The European Economic Area (EEA) consists of the 27 EU states, and three out of four EFTA states, namely Norway, Iceland and Liechtenstein.[30] The agreement on the EEA extends the single market of the EU to all of the EEA. It was signed on the 2nd of May 1992 and entered into force on the 1st of January 1994. Within the EEA there is free movement of goods, services, capital and persons (the Four Freedoms), however with the exception that the EEA agreement does not fully cover EU's Common Agricultural Policy (CAP) or the Common Fisheries Policy (CFP), but contains special provisions on various aspects of trade in agricultural and fish products. The EEA agreement also has provisions for cooperation in competition rules[31], regulations on state aid, social policy[32], consumer protection, environment, statistics, company law, as well as intention to strengthen and broaden cooperation in research and technological development, information services, education, training and youth, small and medium-sized enterprises, tourism, the audiovisual sector, and in civil protection.

The EEA constituted a market of approximately 385 million consumers before the EU 2004 and 2007 enlargements and accounted for almost 1/5 of the world's imports and exports, excluding intra-EEA trade. After the EU 2004 and 2007 enlargements, the EEA has 500 million inhabitants[33]. Citizens of all 30 EEA countries have the right to move freely throughout the EEA, and to live, work, set up business, invest and buy real estate, with a few minor limitations in certain sectors.

Since the establishment of EFTA in 1960, the European Community has been EFTA's most important trading partner. In 1972 individual EFTA countries signed free trade agreements with the then European Economic Community (EEC) with the aim of abolishing import

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[30] Switzerland remains an EFTA member, but voted against membership in both the EEA and the EU. Switzerland has bilateral agreements with the EU.

[31] Within the European Union, national competition authorities continue to exist and form a cooperative network. The European Commission (Directorate General for Competition) assists national courts by transmission of information and opinions intended for an effective enforcement of European competition rules throughout the community. This includes enforcement of competition rules on antitrust, mergers, state infringements, and control of state aid. EEA competition authorities participate in the network on a regular basis.

[32] I.e. working conditions, standard of living for workers, equal pay for equal work, and no sex discrimination.

[33] Almost 500 million in the EU and only 5 million in the EFTA-EEA states.

duties on industrial products. This aim was more or less achieved by 1977. The idea of a European Economic Area dates back to a joint EFTA-EEC ministerial meeting in Luxembourg in 1984 where a declaration mentioning the establishment of a European Economic Space (later "Area") was adopted. Between 1984 and 1989 the removal of obstacles to trade was undertaken on a case-by-case basis. This approach proved inadequate in the run-up to the EU's single market, due to be completed by 1993. The need for a more structured arrangement and for common institutions became increasingly evident, and in 1989, Jacques Delors, then President of the European Commission, proposed a new form of partnership, which was to become the EEA agreement. The EFTA states at that time, Austria, Finland, Iceland, Liechtenstein, Norway, Sweden and Switzerland, welcomed the ideas with enthusiasm and formal negotiations began in 1990 with signing in 1992 and entry into force in 1994. Since 1st January 1995, Austria, Finland and Sweden have left EFTA and joined the EU, and consequently participate in the EEA as EU member states. Liechtenstein became a full participant in the EEA on 1st May 1995.

Throughout the EEA the same rules are applied to maintain a homogeneous market. The EEA agreement is based on the primary legislation of the European Union, as developed over the past decades and on the succeeding secondary legislation (Acquis Communautaire). Hence, a large part of the EEA agreement is identical to the relevant parts governing the freedoms on movement of goods, capital, persons and services, as laid down in the Treaty on the EU. As the EEA agreement is not a customs union, trade policy towards third countries remains outside its scope. One of the central features of the EEA agreement, and one which distinguishes it from most other international agreements, is that its common rules are continuously updated. As such it is an active and “living” agreement, which ensures that the constant flow of new EU legislation on the internal market is extended to the EFTA-EEA states. The EFTA states provide input into the preparation of the EU legislation, but without voting rights.

The application of the EEA agreement is carried out through a set of institutional arrangements. The agreement established a Joint Committee composed of the EU and of the EFTA-EEA states. Its main function is to take decisions extending EU regulations and directives to the EFTA-EEA states. It is responsible for the ongoing management of the EEA agreement and decides amendments to EEA legislation unanimously. The EFTA-EEA state’s Standing Committee prepares the EFTA-EEA state’s common position, and they are expected to speak with

one voice when meeting their EU counterparts in the Joint Committee. Both committees have several sub-committees and working groups. The EEA Council, which is composed of the foreign ministers of the EU and EFTA-EEA countries, provides political impetus for the development of the agreement and guidelines for the Joint Committee. Ministers meet at least twice a year to evaluate the functioning of the EEA agreement and to discuss issues of mutual interest.

Many EU directives are applicable in the EFTA-EEA states, although these states are not members of the EU. Allowing EU institutions to take decisions applicable to the EFTA countries led to constitutional problems in the EFTA states and required the establishment of two other bodies in the EFTA pillar, the EFTA Surveillance Authority and the EFTA Court. The EFTA Surveillance Authority ensures that the EFTA-EEA states fulfil their obligations under the EEA agreement. As well as general surveillance of compliance, the EFTA Surveillance Authority has powers in relation to competition, state aid and public procurement, reflecting the extended competencies of the European Commission in these fields within the EU. The EFTA Court corresponds to the EU Court of Justice and handles matters relating to the EFTA-EEA states. The EFTA Court deals with infringement actions brought by the EFTA Surveillance Authority against an EFTA state with regard to the implementation, application or interpretation of an EEA rule. It also deals with the settlement of disputes between two or more EFTA States. Furthermore, decisions taken by the EFTA Surveillance Authority can be appealed to the EFTA Court and it gives advisory opinions to courts in the EFTA States on the interpretation of EEA rules.

2 – 4 Iceland

A millennium ago, Vikings who could not accept the authority of the Norwegian king settled in Iceland.[34] Nevertheless, four centuries after the first settlers arrived, Iceland came under the Norwegian throne, and later under the Danish throne. Through the centuries, the feeling of independence and unacceptability of foreign power domination has always been strong. Iceland got home rule from Denmark in 1904 and became politically independent in 1918, with the Danish king as head of state. In 1944[35] it became an independent republic with an elected Icelandic president. Iceland is a parliamentary democracy with the government pending on a majority support in the parliament.

During the Second World War, Iceland was under British and American occupation and escaped both Nazi war destruction and Communist post-war economic destruction. The war years pushed Icelandic economic progress forward, and following the war, Iceland received American Marshall Aid and was firmly embedded in the Western camp. The economy became a liberal capitalist economy, but there were foreign currency exchange restrictions. Government enterprises and monopolies in public utility sectors were a fact of life. It is only when Iceland joined the European Economic Area (EEA) in the 1990s that all currency exchange restrictions were lifted and the Icelandic Krona was allowed to float. However, in 2008 in the wake of the sudden economic problems and the Icelandic banking collapse, currency exchange restrictions were reintroduced. The trend towards privatising state enterprises and removing monopolies has taken off in Iceland, as is the case in many other European countries as well.

The economic standard of living in Iceland is among the highest in the world, and is comparable to other countries in Northwest Europe and the United States, with an average GDP per capita over the last years being around 30 000 USD - 40 000 USD per year, (depending on the exchange rate of the US Dollar at the time, - the growth measured in Icelandic Kronas at constant prices has been relatively steady).[36] The

[34] There are indications of some earlier settlements, possibly by some monks, but archeological and historical documentations are limited.

[35] De facto in 1940 because of the effects of the Second World War in Europe and the Nazi occupation of Denmark in 1940.

[36] GDP per capita are not absolute numbers to measure welfare and should be seen as a guideline only. GDP per capita per year does not say anything about numbers of working hours or distribution of wealth.

unemployment rate has been between 1.5-3% and over the last years immigrants have boosted the work force. Nevertheless, after the implosion of the 2000-2007 economic bubble, unemployment in Iceland is increasing and 2009 showed some net emigration. The distribution of wealth within the country used to be remarkably even, although market liberalisation over the past 15 years has upset that balance by creating new "millionaires". Nevertheless, there is practically nobody under the poverty line due to the government social security system. Iceland is 103000 square kilometres, similar to an average European country, but the population is only just over 300 000 and is currently increasing by around 1% per annum through births beyond deaths. This small population would make Iceland the least populated EU member, as the current least populated EU members are Malta, which has 400 000 inhabitants, Luxembourg with 450 000 and Cyprus with 800 000. Half of the Icelandic population lives in the area around the capital, Reykjavik, and the rest is mainly scattered around the coastline, living of fishing, fishing industry, farming and related service industry. With such a small population, the total economic output, although over the EU average per capita, is only a meagre 0.1% of the EU. The main natural resources are fishing in the high seas, and hydroelectric and geothermal energy. Human "capital" is also of high standard with close to 100% literacy and easy access to higher education. Of Icelandic external trade, approximately 70% is with other members of the EEA and 10% with the United States (2006 figures, there are some fluctuations between years). Table 2 on next page shows Iceland in figures.

Table 2. Iceland in figures

GDP (current USD) (billions)[37]	15.5 [38]
GNI per capita, Atlas method (2004) [39] (USD)	37920
Life expectancy at birth, total (years)	81 [40]
Population, total (millions)	0.3
Population growth (annual %)	approx. 2.0 % [41]
School enrollment, primary (%)	>99 % [42]
Surface area (sq. km) (thousands)	103

Source: Statistics Iceland (2008), World Bank (2004), WHO (2008).

Upon the creation of the EEA in 1992 (implemented in 1994), Iceland became an EEA member along with the other EFTA states (less Switzerland). The EEA membership, however, caused some serious political discussions in Iceland, which often sounded more like high politics rather than economics. (Discussed in more detail in chapter 3).

[37] Billion meaning thousand millions (1 000 000 000).

[38] Statistics Iceland GDP of 2007 with the exchange rate of August 2008. This figure is a guideline only as the Icelandic economy has had a very rapid growth between 2000 and 2007, followed by large exchange rate correction (fall) against major currencies in 2008. For comparison, the World Bank 2004 figure was 12.2 billion USD and the CIA World Factbook (2008) has 20 billion USD. The World Bank figure is realistic but the CIA World Factbook reflects the exchange rate of January 2008 before the correction (fall). (See also following footnote).

[39] When calculating Gross National Income (GNI) per capita in a common currency for operational purposes, the World Bank uses a synthetic exchange rate called the Atlas Conversion Factor. The Atlas Conversion Factor is computed as a three year average of the exchange rate of local currency to USD, adjusted for relative inflation. The purpose of using a synthetic exchange rate is to reduce or smooth the impact of exchange rate fluctuations in the cross-country comparison of national income. GNI based on Purchasing Power Parity (PPP) can vary from the Atlas method figure. According to Statistics Iceland, the 2007 figure for GDP per capita was 64 871 USD (2007 nominal exchange rate) and PPP 38 396 USD. As mentioned in the previous footnote, after being relatively stable for several years, in 2008 the Icelandic Krona lost approximately half of its value vs. USD. When comparing the nominal GDP per capita in 2007 to the PPP, it appears clear that the fall in the value of the Icelandic Krona was a correction of an abnormally strong Krona vs. major currencies.

[40] WHO data. Males 79 and females 83.

[41] Births beyond deaths are approximately 1% and immigration an additional 1%. The net immigration varies between years.

[42] Primary school in Iceland is from the age of 6 up to 15 years old, and includes both sexes.

Despite that the other EEA countries looked forward to EU membership and perhaps in a way saw the EEA as a transition to EU membership, Iceland did not apply for EU membership until 2009[43]. In Icelandic political discussion concern has been voiced over the limited influence a small country like Iceland would have in a supranational alliance like the EU and the question about expenses and benefits has been raised. A major obstacle cited against EU membership by many Icelandic politicians is that if Iceland became a EU member, it would have to accept the EU Common Fisheries Policy (CFP), which means that national control over allocated total fish catch quotas would be lost to the EU Council of Fisheries Ministers. As discussed in chapter 7, unfortunately for the environment and the economics of sustainable fisheries, the EU has for many years caught more wild fish than the fish stocks can support in the long term. A decade ago fisheries and fish processing contributed approximately 10-12% of Iceland's GDP. This figure is now closer to 6%. The decline is not so much because of a reduction in fisheries as such, but more because of a drastically increased GDP in other sectors. Approximately half of all goods exported are fish products, and close to 1/3 of the foreign currency earnings are from fisheries (with some variations between years). No other European country is so dependant on sustainable fisheries[44]. Table 3 (on next page) shows the approximate distribution of the Icelandic GDP.

[43] As previously noted, Austria, Finland and Sweden have since the creation of the EEA left EFTA and become EU members and Norway just narrowly rejected EU membership in a national referendum, which would have left Iceland and Liechtenstein as the only EFTA-EEA members.

[44] No EU member's fishing reaches 1% of GDP. Greece is closest with 0.6%. (By adding fish processing as a land-based industry, this figure can be approximately doubled). Ref.: Eurostat 2006. Fishing is discussed in detail in Chapter 7.

Table 3. Approximate distribution of Icelandic GDP (in percentage)

%	1996	2001[45]	2006[46]
Agriculture	2.2	1.6	1.4
Fishing	9.4	7.7	5.0
INDUSTRY:			
Manufacturing (including fish processing)	16.5	15.5	11.2
Fish processing	4.4	4.7	2.0
Mining and quarrying	0.1	0.1	0.1
Electricity and water supply	3.8	3.7	4.0
Construction	6.7	7.8	10.1
SERVICES:			
Wholesale, retail trade and repair services	12.3	10.0	10.1
Hotels and restaurants	2.0	1.8	1.5
Transport	8.8	8.2	5.9
Financial services, pension funds and insurance [47]	5.6	5.8	8.8
Real-estate and renting	12.0	13.7	17.9
Other service activities	20.6	23.8	23.6

Source: Statistics Iceland 2008.[48]

[45] This column has a total marginal error of 0.3%, most likely caused by numbers rounded up to nearest per-mille (per-mille is 0.1%).
[46] Preliminary data (subject to minor revisions/corrections).
[47] It is interesting to note how little banking contributed to the Icelandic GDP seen in relation to the economic damage done when the main banks collapsed in 2008, leaving the taxpayers with an estimated debt of between 50% and 100% of the annual GDP.
[48] The figures published by Statistics Iceland in 2007 for the year 2001 can differ by a few per-mille points from those published for 2001 in 2008. However, the 1996 figures correspond exactly. The 2006 figures are still under revision and can differ more between the data published in 2007 and 2008.

For comparison to Table 3 on the previous page, Table 4, below, shows the average distribution of the EU GDP and employment.

Table 4. Gross value added and employment by sectors in the European Union in year 2000

	Gross Value Added	Employment
Agriculture[49]	2.1 %	4.3 %
Industry (including construction)	28.2 %	29.0 %
Services	69.6 %	66.8 %

Source: Ministry of Finance, Denmark (2006), based on Eurostat.

Indeed there are similarities between Iceland and the EU, where services represent approximately 2/3 of the GDP and industry less than 1/3. In both Iceland and the EU, agriculture represents a very small portion of the economic activity. It is worth noting that fisheries are more substantial in Iceland than in the EU, although they are a small part of the total economic activity.

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[49] EU fisheries contribute only about 0.25 % of the Union's GDP.

3. Political Debate on Europe [50]

3 – 1 EU as a Political Choice

The question must be asked, why join the EU? Is joining the EU just a political fashion "to be European" or are there underlying economic reasons? In the case of the United Kingdom, Denmark, Sweden, Austria and Finland, joining the EU was based on the economic reason of increased trade (increased welfare) and the political idea to be in Europe. These countries, however, were joining others in a union of similar economic capability. For Ireland, Spain, Portugal and Greece, there was also an incentive to join a group of countries with economic production above their national average. But for the newest members, Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia and Slovenia, it was not only a question of being a part of political Europe with harmonised rules and regulations, but there was a large economic incentive to join a club of richer nations. For the poorer members, not only does their lower price level attract foreign direct investment, but structural funds such as the European Regional Development Fund and European Social Fund are a source of money, - where the richer members have to support the poorer ones. (Annex 1 on page 249 shows EU member states' population and GDP per capita).

Considering the above, when studying an ever-larger EU, it is also worth noting that there has been some hesitation by some countries as well. As briefly noted in the introduction, Switzerland turned down becoming a EU member in a national referendum. Switzerland's "no" to joining the EU and the European Economic Area (EEA) appears to have been based on a policy of neutrality and independence, just as Switzerland was not a member of the United Nations for many years. Norway has twice turned down EU membership in referendums. The Norwegian government applied twice for EU membership and its people voted "no" on both occasions. However, it is widely believed that it is just a question of time when Norway applies a third time and the voters say "yes". Norway, because of the North Sea oil, has become a very wealthy country and richer members contribute more to the EU than poorer ones. Greenland is the only country that has left the EU. Greenland became a

[50] The specific debates on the EMU, Agriculture, and Fisheries are discussed in chapters, five, six, and seven, respectively.

EU member when Denmark joined, but left the Union a few years later.[51] Greenland has a GDP per capita of approximately USD 20 000 per year, comparable to the less well off EU members at the time. At first, being a EU member might have been appealing for Greenland. However, the only reason Greenland left the EU was that the EU Common Fisheries Policy (CFP) was not acceptable and fisheries have a very large profile in the economy of Greenland. (Fisheries Policy is discussed in chapter 7 and Greenland's EU fisheries relations are discussed in part 7-2 on the EU CFP). Iceland has a GDP per capita close to USD 38 000 per year, which is well over the EU average, which was at USD 23 000 before the 2004/2007 enlargements.[52] As such, the Icelandic state treasury would be a net contributor to the EU. However, for Iceland, the main objection cited in political discussion is that the EU fisheries policy is unacceptable. But since Iceland has not applied for Union membership until now, it is unknown what the exact results of accession negotiations will be.

Of the countries that joined in the past, it has also sometimes been with a narrow majority voting. The same has applied to joining the Monetary Union. Of those EU members who fulfil the Monetary Union convergence criteria[53] and thus would be qualified to use the Euro as their national currency, not everybody has accepted it. Why that is the case is not straight forward. When national voting takes place, not every voter is a qualified economist able to decide for himself or herself if there would be an advantage of EU membership. In some cases voters are asked to vote on EU treaties that many of them have not read. Not every citizen is willing or capable to read and thoroughly understand hundreds of pages of legal texts. However, leaving the decision on EU membership to national governments might be considered undemocratic, although the governments were voted in through democratic elections. Voters let themselves be influenced by election propaganda and the difference between propaganda and information can often be a very fine line. In fact, even for economists, there can be arguments both for and against EU membership, although most tend to favour EU membership and economic cooperation. Not surprisingly, the three countries hesitating to become

[51] Greenland is a Danish territory with self-governance for home affairs. Despite leaving the EU, Greenland keeps some links to the EU as a Danish overseas territory, in a similar manner as British and French overseas territories do.

[52] After the EU 2004/2007 enlargements, the EU average GDP per capita is somewhat less. However, the economies of the new members are developing rapidly.

[53] The convergence criteria are discussed in chapter five.

members, Norway, Switzerland and Iceland, are all richer than the EU average.

Many opinions voiced in the press in Iceland about EU membership are based on political feelings about independence and supranational authorities and alliances, more than actual study of economic facts. Beyond the Icelandic state budget, we find it being important to study eventual EU membership as a whole macroeconomic package and which factors in the political economy would change by EU membership. Some industries may see an advantage in EU membership, other may see it as a hindrance to their dominating situation and choose a protectionist approach instead. The latter seems to apply to fisheries and agriculture, although for different reasons. The Icelandic farmer, under harsh climatic conditions, is relatively unproductive and fears that cheaper imports of food products would push him out of his domestic production. On the contrary, the Icelandic fisherman is highly productive and fears competition from others who would like to use his exclusive natural resources, perhaps to the point that they will be overexploited and destroyed.

A parallel between the EEA accession negotiations at the time and EU membership negotiations today would be a gross simplification. Political opinions in Iceland about European cooperation have varied. Stephensen (1996) focused on Iceland and the EEA. He divided his work into two main parts, the first one on the build up to the EEA negotiations and on the negotiation process, including Icelandic demands and requests, and the second part on the viewpoints of the different political parties in Iceland. The title of his book "Afangi a Evropufor" (loosely translated: A Stepping-Stone on the Road to Europe) indicated the viewpoint (in year 1996) that the EEA is only a stepping-stone on the road to Europe but not the end itself. Stephensen focused on the political history of the EEA negotiations from an Icelandic perspective. His analyses of the attitudes of the Icelandic political parties towards the EEA indicates a certain parallel between those parties which traditionally have supported liberal capitalist trade, which also supported the EEA, and those parties which have been considered more sympathetic to communist ideology, which tended to oppose the EEA. Nevertheless, he finds the relationship between left and right, vis-à-vis opposing and supporting the EEA, not 100% clear-cut. The Women's Party[54] opposed the EEA, the People's

[54] The Women's Party (Kvennalisti) was a left wing feminist party. It ceased to exist as an independent political party in 1998 and joined others.

Alliance[55] opposed the EEA but was open to bilateral discussions with the EU, the Progressive Party[56] was split in its position, the Independence Party[57] supported the EEA with a few individual exceptions, and the People's Party (Social Democrats)[58] were firm supporters of the EEA participation. Stephensen notes that there were individual Icelandic parliamentarians deviating from the official party lines on the EEA issue. According to Stephensen, the reasons for opposition were not only concerns about possible negative economic impacts stemming from free movements of goods, services, capital, and labour, but equally much a consideration of ideas about national independence and not being subject to foreign or international authority. This, we find, supports the idea that joining the EU is ultimately a political decision, but not only an economic calculation.

In this context it is interesting to note Figures 6 and 7 on next page, showing results from Icelandic opinion polls on attitudes towards EU membership over the last few years.

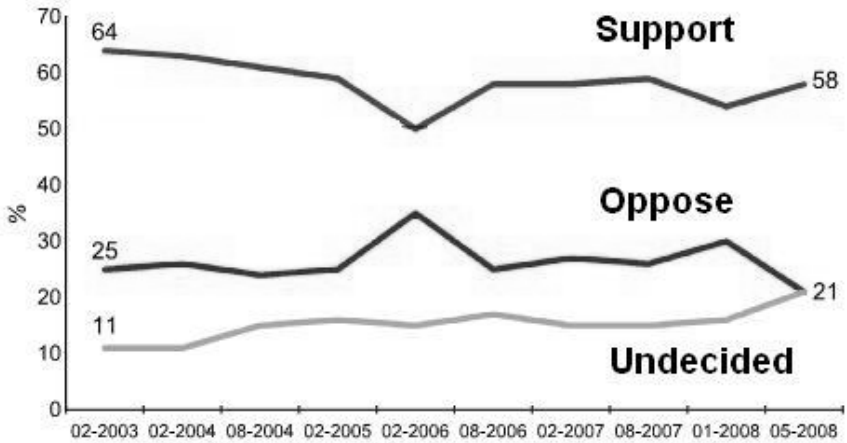
[55] The People's Alliance (Althydubandalag) was a leftist party, its supporters ranging from social democrats to communists. It ceased to exist as an independent political party in 1998 and joined others.

[56] The Progressive Party (Framsoknarflokkur) is a somewhat open-ended centre party and participates in government coalitions on both the left and the right, pending on election results. It used to have a large power base amongst farmers.

[57] The Independence Party (Sjalfstaedisflokkur) is a right leaning liberal capitalist party. Its name stems from old times and is not related to supranational EU or EEA participation.

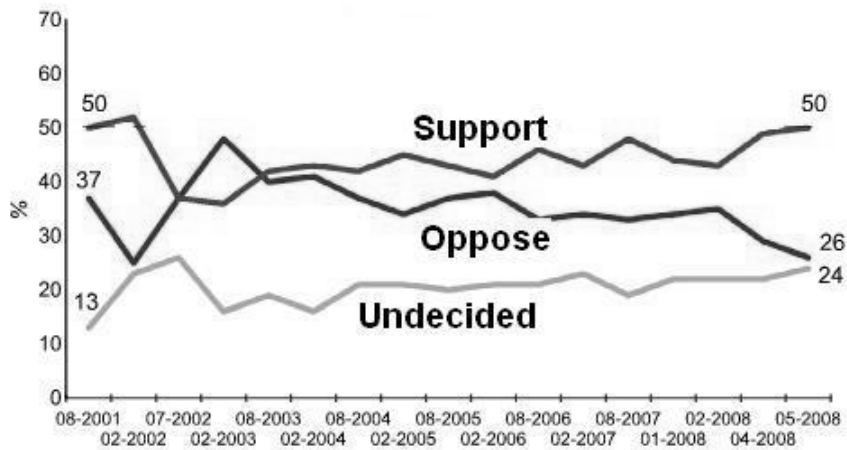
[58] The People's Party (Althyduflokkur) was a traditional social democratic party, a left leaning workers party, but in contrast to the People's Alliance (Althydubandalag), the People's Party (Althyduflokkur) was a firm supporter of West European social values and opposed non-democratic communist ideology. It ceased to exist as an independent political party in 1998 and joined others.

Figure 6. Percentage of Icelandic population who supported EU *accession negotiations* in the period 2003 - 2008.



Source: Federation of Icelandic Industries, based on inputs from Capacent Gallup (2008).

Figure 7. Percentage of Icelandic population who supported EU *membership* in the period 2001 - 2008.



Source: Federation of Icelandic Industries, based on inputs from Capacent Gallup (2008).

It is worth noting that the polls indicate more support to start accession negotiations with the EU, than the actual support for membership. Although the majority of people have already more or less made up their minds on EU membership, this is nevertheless an indication that there are some members of the public who care about the outcome of accession negotiations and will make up their minds based on the deal made in an accession treaty.

The report made by the Committee on Europe (Evropunefnd, 2007) indicated the opinion of politicians and political parties in Iceland on European Cooperation as it was in 2007. The Progressive Party indicated that it can turn both ways and is open to status quo as well as to consider EU accession negotiations.[59] This point of view corresponds well to their split opinion when Iceland joined the EEA. The Liberal Party[60] had serious reservations about Icelandic EU membership, the main objection being EU fisheries policy and the fact that Iceland has prospered well outside the EU. The Social Democratic Alliance[61] supports Icelandic EU membership. The Left-Green Movement[62] on the left and the Independence Party on the right, - at the two extremes in Icelandic politics, - both agreed on that there were no pressing needs to join the EU and both believe that the disadvantages of EU membership are greater than the advantages. However, the Left-Green and the Independence Party disagree on some important aspects. The Left-Green believe that the EU is too capitalist oriented and non-democratic and that Iceland should develop the EEA agreement into bilateral cooperation with the EU, which indeed reflects somewhat the opinions of its forerunner, the socialist and communist oriented People's Alliance at the time of the EEA negotiations. The Independence Party is a firm supporter of the EEA agreement and its economic freedoms, which reflects well its liberal capitalist background.

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[59] The Progressive Party indicated in January 2009 that they would support conditional EU accession negotiations.

[60] The Liberal Party (Frjalslyndi Flokkurinn) is a centre-right party. The Liberal Party did not exist when Iceland joined the EEA.

[61] The Social Democratic Alliance (Samfylkingin) did not exist when Iceland joined the EEA. The Social Democratic Alliance consists mainly of the former People's Party (Althyduflokkurinn), the former Women's Party (Kvennalisti) and the moderate elements of the former People's Alliance (Althydubandalagid).

[62] The Left-Green Movement (Vinstri Graenir) is a relatively hard-line socialist party. The Left-Green Movement did not exist when Iceland joined the EEA. Many of its supporters came from the former People's Alliance (Althydubandalagid).

In 2008, when the economic boom of 2000-2007 came to an abrupt end, followed by allegations of corruption and financial misconduct within the major Icelandic banks[63], eventually forcing the government to step down, the discussion on Iceland's economic and political future took a different course. It was now clear that the laissez-faire policy of the previous years would have to be reconsidered. Following early parliamentary elections in 2009, a new coalition government was formed by the Social Democratic Alliance and the Left-Green. The months before and after the elections were filled with many heated discussions on the causes of the economic collapse, who should bear the burden of the tremendous financial losses sustained, finding scapegoats, investigating fraud allegations, and if EU membership would be helpful for Iceland. During the years of the economic upswing, many Icelandic banks, enterprises and individuals were overoptimistic about the economic and financial future. In order to avoid the traditionally high interest rates in Iceland, many had taken loans denominated in foreign currencies. With a free flow of capital, large differences in interest rates are not sustainable in the long run and that put pressure on the exchange rate. Eventually the value of the Icelandic Krona depreciated rapidly (Figure 9 on page 99) and the accumulated foreign debt, measured in Kronas, multiplied accordingly. Many political voices then pointed out that if Euros were the official Icelandic currency, the burden of paying back Euro nominated debt would not have skyrocketed. Since the EU basically rejects that non-EU members adopt the Euro as their national currency, EU membership was suddenly seen as a solution.[64]

The Social Democratic Alliance had stated before the 2009 elections that they would support an Icelandic application for EU membership. However, the Left-Green Movement had serious reservations about any steps taken to approach EU membership. Despite the disagreements within the coalition government, the Icelandic parliament voted in July 2009 to apply for EU membership, with 33 votes for, 28 votes against, and two abstentions. The only political party in parliament that did not have a split opinion was the Social Democratic Alliance, where all members voted for the application. Members off all

[63] At the time of this writing the allegations are still under investigation and only a few minor sentences have been passed.

[64] As we show in chapter 5, Iceland is for the time being not in an economic position to join the European Economic and Monetary Union (EMU) and to adopt the Euro. Domestic economics have to be in order before an EMU member can be accepted. This procedure will therefore take several years, but may in due time reduce the chance of a similar crisis.

other parties availed themselves of the freedom to vote in accordance with their personal opinion, regardless of official party lines. Eventually, Iceland intends to hold a national referendum on EU membership, - if and when an accession treaty has been worked out.

3 – 2 Studies and Opinions on the European Integration Process

Iceland joined EFTA in 1970, 10 years after its establishment, but did not consider EU membership until 2009, after almost all European states had already joined the Union. As pointed out in part 3-1, there are several political voices in Iceland both for and against EU membership. For states, such as Iceland, with a GDP per capita over the EU average, it is far from straight forward to join a Union poorer than itself. As shown in chapter 4, part 2, it appears clear that in case of EU membership, the Icelandic state treasury would have to contribute more to the EU than would be returned directly from Union funds. Pro-unionists point towards other rich EU nations and the fact that on a long-term basis their economy is far from hurt by EU membership. Icelandic anti-unionists and sceptics refer to the Common Fisheries Policy (CFP) as an absolute obstacle for Iceland, mentioning how important fisheries are to the Icelandic economy and that the CFP has almost depleted parts of the ocean of wild fish, far beyond what marine-biologists consider sustainable yield.

Free Trade Agreements (FTAs) are in many cases an alternative solution for those countries hesitating to accept too much economic and political integration. EFTA is a good example. EFTA and the European Economic Community (EEC, the forerunner to the EU), are of similar age, both conceived in the late 1950s. Over the years they developed differently. EFTA remained a free trade association, but the EEC aimed at a much deeper integration, which is still continuing to this day, to the point the current EU is a supranational alliance. The EU is still growing and admitting new member states, but the EFTA is shrinking, with only four members left. As we noted in the Historical Overview, those states who have left EFTA have all moved over to the EU, and three of the four remaining EFTA states have applied for EU membership, where two applications were narrowly turned down in national referendums and the third one is still undecided.

Going a bit back in history, it is interesting to look at what were the motives behind EFTA's creation. Balassa's paper (Balassa 1963) "European Integration: problems and issues" is written only a few years after the creation of the EEC and EFTA. He mentions the same point as Schopflin (1964) that EFTA did not aim at as deep economic and political integration as the EEC did. Balassa used the expression "the Outer Seven" for the then EFTA members. He referred to the EEC and EFTA as two trade blocks, which indeed was much the case until the creation of

the EEA three decades later, and his paper consequently focussed on the EEC. Interestingly, EFTA hasn't changed much from being the "outer" parts, or perhaps after the creation of the EEA, to be the EU satellite states, this of course being further emphasised in the 1990s by the EFTA members wishing to become EU members and thereby abandoning EFTA. Today, when EFTA is almost five decades old, it is easy for us to state what EFTA is and became, and what EFTA was and is not. However, to make statements on the future of EFTA in the organisation's first years was not as straight forward. Schopflin's (1964) attempt to forecast the future in "EFTA: The Other Europe" turned out to be very right. Schopflin pointed out the same as Balassa the year before, that although EFTA and the EEC originated in the same period, the ultimate goal was not really the same, where the EEC aimed at a deep political co-operation, but EFTA was a much simpler free trade arrangement. Already in those early years it was clear that Britain, then being the largest EFTA member, was not willing to go into the deeper political co-operation that was underlying the EEC. Interestingly, Britain is still a laggard in many European cooperation matters despite having joined the EU. Schopflin pointed out that EFTA was a reaction to the EEC common market and common external customs tariffs, and the future of the EFTA would be closely linked to the outcome of European integration and a Europe-wide market. Forty years later, European integration under the EEC/EU umbrella has been very successful, and EFTA has been reduced to a dwarf next to the EU, only serving those members who for some reason have not (yet) been willing to accept EU membership. EFTA received some further attention in 1965 when the journal International Organisation published an article on it under the headline of Political and Regional Organisations. Although this article was just a political-empirical discussion, the fact that EFTA received international attention in its early years is interesting. We believe that when the United Kingdom left EFTA in 1973 and joined the EEC, the course was set to a growing EEC (later EU) and reduced importance of EFTA as a major European organisation.

Free Trade Areas (FTAs) are not always a magic economic solution, as shown in Wonnacott's (1996) analyses. FTAs can include complex forms of agreements, where e.g. countries A and B have an FTA, and B and C have an FTA, but A and C do not. This produces a hub-and-spoke system, where trade and additional manufacturing channels through the central country (country B in this example). Although FTAs may be good, Wonnacott finds that when FTAs multiply, as is the contemporary economic fashion, they may be less than desirable because they channel trade to certain countries where there is no guarantee that the goods are

cheapest. We believe that Wonnacott's theory could be applicable in the case of EFTA, where EFTA has been working on establishing free trade agreements with several third countries (Figure 3 on page 33). Wonnacott does not provide estimation, he merely points towards the theory where hubs and spokes can create trade diversion. Such issues may be trivial in the big picture, but they illustrate that it is far from easy to build a model showing economic changes caused by EFTA-EEA countries moving over to the EU.

As we already pointed out, in an effort to bridge the gap between the EU and EFTA, the European Economic Area (EEA) was established in the early 1990s. It is composed of all the EU and EFTA states, except Switzerland, which turned the EEA agreement down and made bilateral agreements with the EU instead. The EEA as it is today provides for only a part of the EU cooperation, notably the free flow of industrial goods, people, capital and services, but not for participation in the Customs Union, the Economic and Monetary Union (EMU), Common Agricultural Policy (CAP), Common Fisheries Policy (CFP), nor in EU's political cooperation and development of the Union's Common Foreign and Security Policy (CFSP). As the name implies, the EEA focus is on economic affairs along the EFTA lines, but not on a political union like the EU is. We have not seen any indication of that this will change as an institutional arrangement, although more EFTA-EEA states will undoubtedly move to EU membership.

A few years after the EEA creation, Ersboll (1994)[65] gave a personal political viewpoint of EU expansion priorities and how new members must be accommodated, at least with transitional arrangements, until the full impact of a common market would take place. Ersboll was positive on the EU enlargement to the east and believed there were solutions to the obstacles and questions raised. Although we now know that it took another decade before most of Eastern Europe became EU members, it is interesting to note the political willingness to accommodate new Union members. Fontaine (1998) also mentioned EU's expansion and the Union's relations to the rest of the world. His expansion focus was to the east, to the former communist countries in Europe, Turkey and the former Soviet Union. The Mediterranean states outside Europe were only considered under the rest of the world, and the European states hesitating about membership (EFTA-EEA) are not mentioned beyond the historical overview of the signing dates of the EFTA and the EEA treaties.

[65] Niels Ersboll (1994) was the Secretary General of the Council of the EU when he wrote his paper "The European Union: the immediate priorities".

Fontaine's writing is not published as his personal viewpoint, but accredited by the European Commission, which adds political weight to it. We see that as an indication that the EU doesn't pay any attention to if the small remaining EFTA-EEA states are members or not, although there is no indication that they would not be welcome if they so wished.

In this study we try to quantify the economic gain or loss in Iceland from joining the EU, although we accept that joining the EU is ultimately a political decision based on a broader perspective than just economics. Phinnemore (1999) in "Association: Stepping-Stone or Alternative to EU Membership?" mentions, as late as in 1999, that only a few associate states have actually become members of the EU, and that raises doubts about whether association should be seen as a stepping-stone to EU membership. Today, only a few years after his publication, time has shown that of those states that had signed association agreements, which entered into force in 1999 or before, most are already, or will soon be EU members. Phinnemore considered the EEA as one type of EU association agreement, albeit with relatively strong links to the EU. Although an association agreement is no automatic key to EU membership, most association states have looked at it as a stepping-stone to bolster their applications. In this context it is worth noting the possibility of a "Swiss-model", as discussed by Arnorsson et al. (2003). In a "Swiss-model" the relationship with the EU is fostered by bilateral agreements rather than by Union membership. However, the EU has indicated that a "Swiss-model" is not an option for Iceland. Politically the EU is not willing to make a complicated network of bilateral agreements with Iceland, like the Union concluded with Switzerland following that country's failure to ratify both its EU membership and its EEA membership. This basically excludes other options for Iceland than either the current EFTA-EEA arrangement or full EU membership.

When studying eventual EU membership, the driving forces behind the integration are of importance. Many of the early factors are still relevant and although Balassa (1961) "The Theory of Economic Integration " is relatively old literature when discussing European economic integration, many of his definitions and economic principles are still valid, such as on customs unions, technology as a growth factor, harmonisation of social policies as an economic issue, and fiscal issues in a union. An interesting fact is that Balassa often compares the European integration at the time to cooperation efforts in Latin America, whereas many contemporary writers compare the current EU economy to the United States. Living up to a comparison with the United States economy is not easy and not all literature is a glorification of an economically

united European superpower. The Sapir report (Sapir et al. 2004) is based on the overall impression that Europe has failed to deliver a satisfactory economic growth performance. It notes, perhaps with certain envy, that the EU GDP per capita has stagnated at about 70% of the United States level and finds that faster growth is paramount to the sustainability of the European model. The Sapir report notes the opinion of its authors that Europe's unsatisfactory growth performance during the last decades is a symptom of EU's failure to transform into an innovation based economy, that the old economic model of existing technologies, mass production with economics of scale and an industrial structure dominated by large firms with stable employment, should change for a new model leaving room for new entrants, greater mobility of employees, more retraining, more market financing and higher investments in both research and development as well as in education. As a fact finding report suggesting remedies the Sapir report has done a good job. However, the problem will remain for the politicians and the executive to implement economic and social policies that will have to shake up the culture, mentality, thinking, and rent seekers in the current system in the "Old World[66]".

The European political-economic model is not the same as in the United States. Some of Krugman's (1983, 1986, 1994, 1996, 1997) writings provide an interesting aspect. Often critical, he manages to shed a different light on many current issues, e.g. criticising the (then) President of the European Commission, Jacques Delors, for hesitating to tell EU leaders in 1993 that their economic problems were caused by regulations imposed by the European welfare states, too high taxes, and the EMU after the German reunification. Instead Delors told European leaders that Europe's problems are a lack of competitiveness vis-à-vis the United States and Japan, and that the solution would be investments in infrastructure and technology. (Krugman, 1997). We strongly believe that most of EU's economic activity is within the Union and not a competition with Japan and the United States in selling their products to an imagined third party outside client. This should be seen in the context of the Sapir report (2004) on Europe's unsatisfactory growth when compared with the United States. However, Japan would make a favourable comparison today, as its economy has been almost stagnant for well over a decade.

The discussion on being a small country, from a political and economic perspective, or being a large country, is subjective. Alesina and Spolaore (2003) mention the size of nations from both a political and an

[66] Old World meaning Europe, New World referring to the Americas.

economic perspective. Amongst their findings is that nation-states can afford to be small if they are economically open. They find that when considering international trade and growth, that country size mediates the correlation between trade and growth. This indicates that for smaller countries, borders are more costly than for large countries. If we apply this to Iceland, it means that open borders would be preferable as the country is very small. Alesina and Spolaore (2003) findings on open borders are somewhat in line with Frankel and Romer (1999).

Small states influence on the EU is an important question for Iceland. We want to draw attention to Hosli's (1993) analyses of the theoretical effects on voting power in the EU Council of Ministers if the EFTA states became EU members. According to Hosli, Iceland would have had the same voting power as Luxembourg, which is trivial, unless used in alliance with other members. Intuitionally, Hosli's theory falls within what appears to be the experience of small states in large multi-national alliances. We feel that since it is not objectionable to small EU members like Luxembourg to have limited influence in the voting process in the EU Council of Ministers, there should be little reason for Iceland to think differently. From our viewpoint, the only potential concern is when EU Fisheries Ministers decide on total fish catch quotas, where Iceland objects to catching more fish than marine biologists recommend as sustainable fishing, Iceland might find itself in a difficult position unless guidelines on quota allocation are pinned down in an accession treaty. On the other hand, having a limited voting power in the EU Council of Ministers, seems much more desirable than the current EFTA-EEA arrangement with no voting rights.

European law is supranational and member states are obliged to incorporate EU rules and directives into their national law. This raises questions about democratic influence. Phelan (1993) intended to be thought provoking on that EU citizens should not accept everything without critic of what politicians and "Brussels bureaucrats" serve for them. Phelan points out some of the problems in the EU integration process; propaganda to influence voters concerning issues they are asked to vote on, and alternatively governments not bringing up to vote critical issues which influence national sovereignty and its transfer over to EU institutions from national capitals. We have the overall impression that Phelan is in a way voicing many of the concerns sceptical British politicians regularly mention about European integration and we accept that healthy and constructive criticism is good. The issues of national sovereignty are also frequent in the political discussion in Iceland, although the economic discussion seems to overshadow most other

concerns. In a democracy a constructive debate is necessary and political scepticism may be justified, but it has not stopped the ongoing trend towards increased European integration.

Although not related directly to the estimation of the impact if Iceland joined the EU, there are some interesting points raised by Lasok (1990 second edition, and 1998 third edition). Lasok gives a thorough overview of how free trade areas, tax and customs unions work, their differences, and problems associated with economic integration. His work reflects his education in law and includes legal examples, which are beyond our scope. Nevertheless, Lasok gives general current and historical explanations, which include examples of economic integration that are not always successful, such as Italy, with the rich north and the poor south. We also note that Lasok points out that the importance of regional policy in the European Union is a potential correction to regional economic imbalances. From our viewpoint, at this stage it is not possible to state if Iceland would be considered a region on the periphery of the EU, in need of special support or consideration, or if it would be considered well developed and more in a position to contribute than receive. From a state economic perspective in terms of GDP per capita, Iceland would fall in the category of the rich parts of Europe, but with a relatively non-diversified economy and relatively dependent on fishing, it would indeed also need some regional consideration. We ought to bear in mind that there is no exact standard packet new EU members get. There are always accession negotiations, based on certain principles (Acquis Communautaire), on the criteria new members join the Union. Because Iceland has never before applied for EU membership, it is not possible to jump to conclusions and state exactly what the effect of an un-negotiated and undecided deal would be.

3 – 3 Political and Social Rights

We consider the rights of states as political issues and the rights of citizens as social issues. The EEA agreement has provisions for social policy, health and safety at work, labour law, equal treatment for men and women, and consumer protection. There will not be much change in the social rights of Icelandic (and European) citizens if Iceland abandoned the EFTA-EEA for EU membership. Under the EEA agreement, there is already a provision for the freedom of movement of persons, both to work and to set up businesses. Furthermore, since the culture and social structure in Iceland is very similar to the other EEA and EU states, there is not to be anticipated any change in social security, pension rights, work rules or civil and political rights.[67]

On the political front, however, considering the rights of states, the matter looks different from what concerns private citizens. Under the EFTA agreement, all member states are considered sovereign states. In contrast, the Treaty on the European Union is a supranational treaty, where EU law has priority over national legislation. Under the agreement on the EEA, the EFTA-EEA states are obliged to adopt in their national legislation a number of EU laws in order to harmonise all of the EEA market. The politically sensitive question arises how these laws are enacted and formulated. The EFTA-EEA states are not represented in the European Council nor are they represented at the Commission. Consequently, they have no voting rights on EU laws, although the European Commission consults the EFTA states representatives when it is drafting legislation that concerns them. The European Commission treats its member states like company shareholders, but the associated states,

[67] It is interesting to note that the United Kingdom, often regarded as a laggard in EU cooperation, opted out of the social chapter in the Maastricht Treaty of 1992 (then with a conservative government), but accepted the social provisions in the Amsterdam Treaty of 1997 (then with a labour government). This leads directly to the question on the European social model with high protection for employees, compared to the social model in the United States. High worker protection makes it difficult and expensive for employers to fire workers. However, because of the difficulty in firing redundant workers, European employers and enterprises often refrain from hiring personnel they may actually need, in order to avoid possible problems later. In the United States it is generally easier to get hired, - and to get fired -, than in Europe. On the other hand, many Europeans complain about the difficulty in finding jobs and that nobody wants to take them on. From a macroeconomic point of view, it is obviously more beneficial to society that people work than if they live of unemployment benefits.

such as the EFTA-EEA states, are considered outsiders. The associated states have to deal with the commission by inputs and negotiations, but do not have the same influence as full members of the club. In the case of the EFTA-EEA states, there is also the Joint Committee composed of the EU and the EFTA-EEA states (explained in chapter 2, part 3 on the EEA), whose main function is to take decisions extending European Union regulations and directives to the EFTA-EEA states. However, when a giant talks to a dwarf, the EU being the giant and the EFTA-EEA states the dwarf, the giant is in a much stronger position. There is considerable willingness by the European Commission to consider the EFTA-EEA states wishes, but if they have too serious objections, they will be ignored. The same applies also to smaller EU states, if they are not allied with others in their proposals, their negotiating position and voting power will be marginal (see e.g. Hosli 1993). Consequently, being a Union member gives a stronger position than being just an associate. It is wrong to say that the EFTA-EEA states have to adopt EU legislation without having any influence on its formulation, but it is correct that not being full EU members, their influence is less than the influence of Union members of the same size.

Another political reality is that if Norway applies a third time for EU membership and the Norwegian voters say "yes" this time, it is not viable for Iceland and Liechtenstein to continue the EFTA-EEA arrangement simply because of their small size, lack of political and economic weight, and the expenses of keeping the EFTA and the EEA administration going.

It may be speculated that the EU Common Foreign and Security Policy (CFSP) may at a future stage be a matter of diverging views and interests, but as of this writing the CFSP is in too an early stage of development to be more than an open question. At the current stage, the EFTA and the EFTA-EEA states do not participate in formulating a future EU CFSP beyond individual bilateral diplomatic relations. When looking at EU regional policy, increased economic cooperation has led to increased regional political cooperation such as cooperation in both justice and home affairs. Under the EEA umbrella, some of EU's regional cooperation is also already taking place in Iceland, e.g. participation in the Schengen agreement on passport free travel, despite that Iceland is not a EU member.

Table 5 (on next page) is presented to give an idea of the differences between the various forms of economic integration EU and EFTA states face. A more detailed description of EFTA and the EEA is in the chapter two.

Table 5. Union comparisons

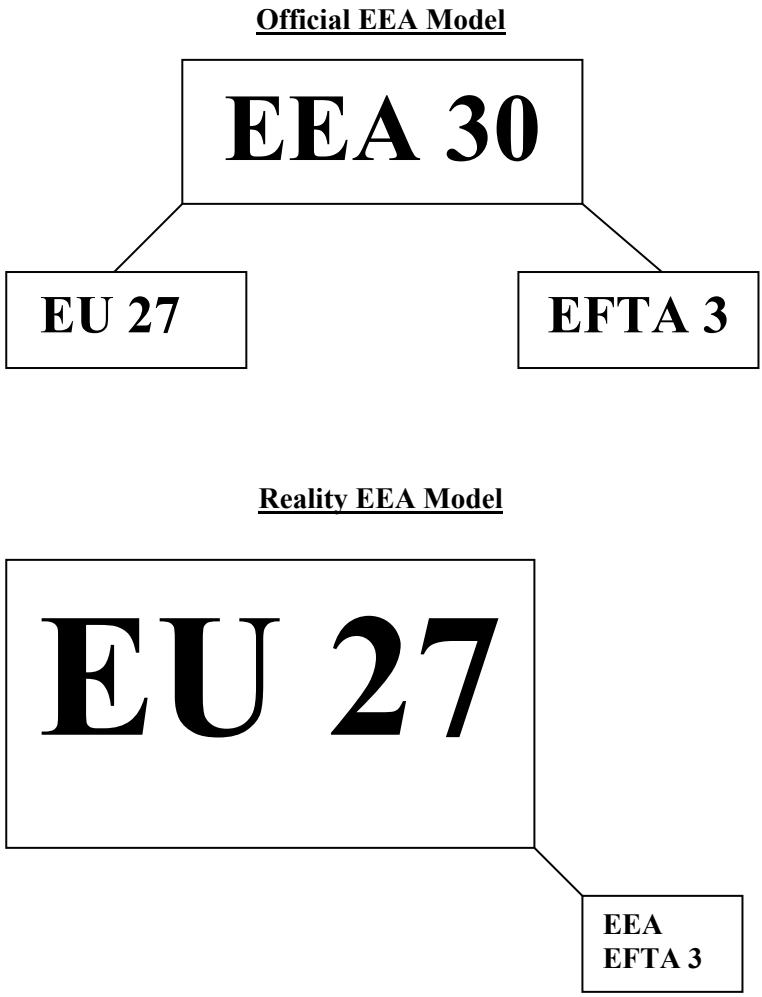
	Political Union	**Economic Union**	**Free Trade Area**
EFTA	No	No	Yes
EU	No [68]	Yes	Yes
EEA	No	Only partially	Yes

Table 5 (above) requires some explanations. A Free Trade Area is a relatively clear concept although Free Trade Areas can have different rules on origin of goods and how much imported goods must be processed to qualify for free trade. There is no universal definition of a Political Union or Economic Union and these definitions can be open to discussion, e.g. the United States (political union) with 50 states, not all applying the same local law, but nevertheless all having the same federal government. The EU is increasingly harmonising its policies, both internally and vis-à-vis the outside world, but it does not have a federal government. Nevertheless, many EU regulations are supranational and member states are obliged to incorporate them into national legislation.

EFTA and the EEA are only of minor political and economic interest to the EU as a whole because of the relatively small size of the EFTA members. However, on the contrary, the EU part of the EEA is very important for the EFTA-EEA states trade. For neighbouring countries, e.g. Sweden (EU and EEA member) and Norway (EFTA and EEA member) or Germany (EU and EEA member) and Switzerland (EFTA member), bilateral and multilateral political and economic affairs also play a significant role. Figure 8 on next page shows the EEA theory versus the EEA political reality. The three EFTA states that are members of the EEA would like to see the EU as their counterpart under a giant EEA umbrella. The reality is that the EU is a political and economic giant and the EFTA part of the EEA and the EFTA states themselves are just considered as EU associated states but not as full team players. They are welcome to join, but if they want to stay on the side it is their choice.

[68] Under the assumption that a political union refers to being one country. However, every new treaty signed by EU member states goes a small step closer to a federal Europe, e.g. CFSP after the Lisbon Treaty.

Figure 8. Official EEA model compared to the reality EEA model.[69]



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[69] We apologize to the many Icelandic bureaucrats and politicians who feel offended by this model, but we cannot see a better way to demonstrate that the EEA and EFTA are not EU's equal counterparts, nor are they EU's central concern.

4. Economic Impact of EU Membership

4 – 1 Key Economic Factors that Change

When estimating the economic benefits of an aspiring EU member, there are two issues that must be considered. Firstly, the direct cost of funds paid to the EU by the aspirant member state, minus direct payments received by the aspiring state from the EU. Secondly, the macroeconomic impact and net welfare change stemming from the benefit (or cost) of a much larger market, zero import and export tariffs for all intra EU trade[70], customs union, and of a common currency, all of which is more to the benefit of consumers and corporations, rather than the state itself. The first issue, the direct cost/benefit to the state budget, can be estimated with a certain margin of error, but the second part appears to be more an educated guess rather than a clear figure. Although we can't put up an exact figure, we will attempt to quantify it and show if the tendency is positive or negative.

The principal economic factors in the EU not covered by the EFTA-EEA arrangement are:

(1) The EU Common Budget,
(2) The EU Customs Union (CU),
(3) The EU Economic and Monetary Union (EMU),[71]
(4) The EU Common Agricultural Policy (CAP) including a free flow of agricultural goods,[72]
(5) The EU Common Fisheries Policy (CFP).[73]

In this chapter we discuss the government's direct expense of EU membership through participation in EU's common budget (part 4-2), the EU Customs Union, (part 4-3), and other economic issues such as foreign direct investment and economic specialisation (part 4-4). The EMU, CAP and CFP, with all their controversies, are discussed in detail in chapters five, six and seven.

[70] Recall that industrial goods are fully covered by the EEA, but agriculture and fisheries to a much smaller extent. In comparison, the EU single market covers all goods.
[71] Discussed in chapter 5.
[72] Discussed in chapter 6.
[73] Discussed in chapter 7.

4 – 2 The Government's Direct Cost of EU Membership

4 – 2 – A The EU budget

EU member states contribute to the Union's common budget, but member states also receive money back in various forms. The EU acts in some ways as nation states do; it redistributes parts of its wealth among its subjects in order to promote its common policies. The EU aims to keep its budget below 1.24% of its Gross National Income (GNI), which is a very small budget compared to most member states national budgets.[74] With a yearly budget of over 100 billion[75] Euros (approximately 200 Euros per EU citizen), we shall ask where the EU money comes from and what is it spent on? Let us look at the EU revenue and expenses:

The EU revenue is based on:

- Gross National Income payments (GNI). Member states pay a fixed percentage of their GNI to the Union. Currently this amounts to approximately 2/3 of the Union's revenue.
- Value Added Tax (VAT). VAT resources are from a uniform rate applied to a common tax base. This common tax base is a theoretical construct, which compensates for that neither VAT rates nor the list of goods and services covered by VAT are harmonised within the EU.
- Customs duties. Customs duties go to the EU based on the common customs tariff, less member states collection costs. These duties are levied on goods from third countries and it does not matter where the goods enter Union territory.
- Agricultural duties and sugar levies. The Agricultural duties are on agricultural products imported into the EU from third countries and sugar levies are paid by sugar producers to subsidize sugar exports.
- Other (small) revenue, e.g. bank interests, taxes levied by the EU on its personnel, unused financial assistance, balance of previous

[74] We should emphasize that these direct monetary transfers to and from the Union's common budget are independent of other indirect economic effects of Union membership, such as a larger market, common currency, etc.
[75] Billion meaning thousand millions (1 000 000 000).

budget and contributions from non-member states to certain EU programmes.

The EU main expenses are:

- Preservation and management of natural resources. This ambiguous subheading is euphemism for agricultural and rural subsidies. It takes approximately 45% of the Union's budget.
- Sustainable growth and structural aid. This includes competitiveness, research, development, transport, energy networks and cohesion expenses to assist less developed areas of the Union. This amounts to approximately 45% of the Union's budget.
- Other (relatively small) expenditure, e.g. aid to third countries, administration, citizenship, security and justice.

4 – 2 – B Previous estimates on costs of EU membership

There have been some attempts to estimate the direct net cost to the Icelandic treasury from EU membership. Asgrimsson (2000), Minister of Foreign Affairs of Iceland at the time, in his report to the Icelandic parliament on the "Position of Iceland in European Co-operation" gave a lengthy overview and discussion on all aspects of Icelandic policy issues versus the EU.[76] Asgrimsson used empirical evidence and figures on the EU. When he discussed potential consequences in Iceland if Iceland became a EU member, his estimates were in relatively general terms, which reflects well how difficult it is to assess actual impact from membership. Asgrimsson's report has two main chapters, the first one being a general discussion, and the second one with 29 subchapters and analysis of different aspects of European co-operation. Although he made an attempt to mention the changes if Iceland were a EU member compared to the current outsider-EEA position, the discussion on the pros and cons of EU membership is rather inconclusive, except that he estimated that Iceland's direct financial expenses and contributions paid to the EU would be higher than the direct benefits paid back to Iceland out of EU funds. On a yearly basis, Asgrimsson expected Iceland to pay 7-8 billion Icelandic Kronas to the Union, and to get about 5 billion Icelandic Kronas from the EU, resulting

[76] It is understood that the report is the work of the Ministry with several anonymous contributing authors, although it is published in Asgrimsson's name.

in a net expense of 2-3 billion Kronas.[77] After the EU enlargements in 2004 and 2007, he believed that Iceland would pay even more and receive even less in return, at least until the economy of the new member states would get better. Asgrimsson was very vague on macroeconomic gains or losses stemming from membership. In 2003 the Ministry for Foreign Affairs of Iceland, still headed by Mr. Asgrimsson, requested the international advisory firm Deloitte & Touche to estimate again the direct cost of EU membership. This time the net expenses were estimated to be between 2.5 and 4 billion Icelandic Kronas.

Herbertsson and Sturluson (2002) also estimated the financial gains and expenses of the Icelandic state treasury if Iceland joined the EU. Their estimation was done at request of the then Prime Minister of Iceland, David Oddson, and only assessed the state finances but not the overall macroeconomic gain or loss on the Icelandic society. In line with Asgrimsson (2000), Herbertsson and Sturluson (2002) found that the state would have to contribute more to the EU than it would get back in form of direct payments from the Union. This also confirmed the reservations the then Icelandic Prime Minister, Mr. Oddson, had about the EU. Herbertsson and Sturluson (2002) estimated a net payment to the EU of between 3.7 billion and 5.6 billion Icelandic Kronas before the 2004 and 2007 enlargements, and 8.3 billion and 10.1 billion after the enlargements. However, Sturluson has informed us (2009, verbal discussion) that he believes that the estimation of the direct costs of Icelandic EU membership after the enlargements was overestimated in 2002, mainly because the Union's expenses to agriculture in the new member states were lower than anticipated at the time.

4 – 2 – C Iceland's payments to and from the EU

There are some inherent difficulties in estimating Iceland's direct expenses of EU membership. Iceland will pay a certain amount to the Union and receive some payments back as agricultural subsidies (discussed and estimated in chapter 6) and as structural aid (referred to as competitiveness and cohesion expenditure in the EU budget). The amount of agricultural and rural subsidies Iceland would receive depends on accession negotiations, such as the possibility of extra support granted to Europe's harsher regions. The structural aid, discussed in part 4-2-D,

[77] The exchange rate of Euro vs. Icelandic Krona is shown in Figure 9 on page 99. Although the value fluctuates considerably, for quick comparison purposes one Icelandic Krona is close to having the value of one Eurocent.

would most likely be in line with the other Nordic countries. The theoretical VAT base would have to be clarified, and the amount of imports to Iceland that would go into the EU Customs Union through other ports of duty than Icelandic ports may influence estimates. In this study we intend to find what net percentage of the Icelandic GNI (or GDP) would go to the Union. The only way to get a realistic idea is to look at empirical evidence: how much do other member states pay and receive back.

Table 6 on next page shows member states contributions to the Union's budget in 2007. It details the VAT part, the GNI part, the UK correction[78], and EU's "Traditional Own Resources", which includes the customs and agricultural duties. The reader will notice that the Nordic countries, Denmark, Finland and Sweden, contribute to the EU 0.96%, 0.91% and 0.86% of their GNI respectively, the EU average being at 0.90% (the rest being surplus from previous year and other revenue). It is fairly straightforward to anticipate that Iceland, as a Nordic country, would be comparable to the average of the other Nordic countries that are already EU members, notably with a gross contribution of approximately 0.91% of GNI.[79]

[78] Based on former UK Prime Minister Margaret Thatcher's (Minister 1979-1990) request in EU budget negotiations: "I want my money back", where the other EU members caved in. This legacy is still in the Union's budget.

[79] In this context it is important to bear in mind that leaving the EFTA-EEA arrangement will not lead to savings of the associated expenses. Iceland's contribution to the EFTA Secretariat is approximately 1 million Euros per year. If Iceland joined the EU, increased expenses of having more personnel working in Brussels on EU affairs rather than on EFTA matters will certainly offset this amount. New personnel will include not only government bureaucrats, but also interest organisations' representatives such as farmers and fishermen. Iceland currently participates in many EU programmes in culture and science. Iceland's current contribution to these programmes is in the vicinity of 6 million Euros per year. Although this is currently an expense for the government, most of this money comes back to Icelanders through the various cooperation projects. (See e.g. EFTA Bulletin: Guide to EU Programmes 2007-2013, (which also provides guidelines on how to apply)).

Table 6. National contribution of EU member states and traditional own resources collected by member states on behalf of the Union, year 2007, in millions of Euros

	VAT based own resource	GNI based own resource	UK correction	Total national contribution			Traditional own resources (TOR net 75%)	Total own resources		
	(1)	(2)	(3)	(4) = (1)+(2)+(3)	%	% GNI	(5)	(6) = (4)+(5)	%	% GNI
BE	468.5	1 985.8	232.5	**2 686.8**	2.9%	0.80%	1 685.1	**4 371.9**	4.0%	1.31%
BG	46.3	163.0	20.8	**230.0**	0.2%	0.80%	60.8	**290.8**	0.3%	1.02%
CZ	199.9	703.8	84.4	**988.2**	1.1%	0.83%	178.8	**1 167.0**	1.1%	0.98%
DK	332.8	1 393.5	162.9	**1 889.2**	2.0%	0.81%	329.8	**2 219.0**	2.0%	0.96%
DE	3 635.2	14 653.8	294.2	**18 583.2**	19.9%	0.76%	3 126.8	**21 710.0**	19.7%	0.89%
EE	26.8	95.8	11.2	**133.8**	0.1%	0.91%	42.8	**176.7**	0.2%	1.21%
IE	276.4	972.2	119.6	**1 368.3**	1.5%	0.86%	218.0	**1 586.4**	1.4%	1.00%
EL	697.9	1 946.6	145.8	**2 790.3**	3.0%	1.25%	229.6	**3 019.9**	2.7%	1.35%
ES	1 722.8	6 073.4	751.7	**8 548.0**	9.2%	0.84%	1 290.1	**9 838.2**	8.9%	0.96%
FR	3 113.8	11 215.7	1 326.9	**15 656.4**	16.8%	0.83%	1 332.5	**16 988.9**	15.4%	0.90%
IT	2 030.1	9 143.7	1 163.2	**12 336.9**	13.2%	0.81%	1 687.2	**14 024.2**	12.8%	0.92%
CY	25.0	88.2	10.7	**123.9**	0.1%	0.82%	46.4	**170.3**	0.2%	1.13%
LV	35.2	118.0	14.9	**168.1**	0.2%	0.88%	30.9	**199.0**	0.2%	1.04%
LT	47.1	158.3	20.1	**225.5**	0.2%	0.84%	45.4	**271.0**	0.2%	1.01%
LU	53.2	202.2	21.2	**276.6**	0.3%	0.95%	19.2	**295.8**	0.3%	1.02%
HU	137.8	546.7	74.9	**759.4**	0.8%	0.81%	110.9	**870.2**	0.8%	0.93%
MT	9.1	32.5	3.6	**45.2**	0.0%	0.86%	11.8	**57.0**	0.1%	1.09%
NL	936.3	3 400.6	92.4	**4 429.3**	4.7%	0.78%	1 873.5	**6 302.8**	5.7%	1.10%
AT	409.0	1 564.9	43.0	**2 017.0**	2.2%	0.75%	201.1	**2 218.1**	2.0%	0.82%
PL	508.7	1 745.6	215.8	**2 470.1**	2.6%	0.84%	338.4	**2 808.6**	2.6%	0.96%
PT	269.4	940.1	113.9	**1 323.3**	1.4%	0.85%	137.1	**1 460.4**	1.3%	0.93%
RO	162.1	681.7	86.4	**930.3**	1.0%	0.80%	159.2	**1 089.4**	1.0%	0.93%
SI	55.9	198.3	22.6	**276.8**	0.3%	0.84%	82.5	**359.4**	0.3%	1.09%
SK	84.6	302.5	41.6	**428.7**	0.5%	0.81%	90.5	**519.2**	0.5%	0.98%
FI	260.7	1 087.7	132.0	**1 480.5**	1.6%	0.82%	148.9	**1 629.4**	1.5%	0.91%
SE	486.6	1 948.9	41.3	**2 476.7**	2.7%	0.73%	438.4	**2 915.2**	2.7%	0.86%
UK	3 409.6	12 551.2	-5 188.9	**10 771.9**	11.5%	0.53%	2 657.0	**13 429.0**	12.2%	0.66%
EU 27	**19 440.8**	**73 914.8**	**58.9**	**93 414.5**	**100%**	**0.76%**	**16 573.0**	**109 987.5**	**100%**	**0.90%**
							Surplus from previous year	1 847.6		
							Surplus from EAGGF Guarantee	0.0		
							Surplus external aid guarantee fund	260.9		
							Other revenue	5 467.0		
							Total revenue	**117 563.0**		

Source: EU Budget and Financial Report 2007.

Table 7, (below and on next page), shows allocation of EU expenditure to member states as a percentage of their GNI. It is less straightforward to estimate how much the EU would pay back to Iceland, than what Iceland would pay to the EU. The variation between member states (2007 data) is larger than with the contributions to the EU. Using the other Nordic countries as reference, Denmark receives 0.63% of GNI, Finland receives 0.79% of GNI, and Sweden receives 0.49% of GNI, the Nordic average being at 0.64%. Denmark's net contributions to the EU are therefore 0.33% of GNI (0.96% minus 0.63%), Finland's net contributions to the EU are 0.12% of GNI (0.91% minus 0.79%) and Sweden's net contributions to the EU are 0.37% of GNI (0.86% minus 0.49%). Using the average, we arrive at 0.27% of GNI. We can therefore conclude with a reasonable accuracy that Iceland's net contributions to the EU might be close to 0.27% of GNI (or GDP), with an estimation error of 0.15% percentage points up or down.[80]

Table 7. Allocation of EU expenditure to member states as a percentage of their GNI, year 2007, in millions of Euros

Austria	0.59 %
Belgium	1.70 % (including 1.10 % on EU administration)
Bulgaria	2.07 %
Cyprus	0.84 %
Czech Republic	1.44 %
Denmark	0.63 %
Estonia	2.57 %
Finland	0.79 %
France	0.74 %
Germany	0.51 %
Greece	3.77 %
Hungary	2.60 %
Ireland	1.37 %
	Table continued on next page

[80] The EU uses GNI in its Financial Report. The difference between Icelandic GNI and GDP is unsubstantial. ¼ % of GNI corresponds to approximately 3 billion Icelandic Kronas. As shown in chapter 8, an estimation error in the order of 0.15% of GNI (or GDP) is trivial in the overall estimates of the effects of EU membership.

Table continued from previous page	
Italy	0.74 %
Latvia	3.52 %
Lithuania	3.88 %
Luxembourg	4.42 % (including 3.80 % on EU administration)
Malta	1.71 %
The Netherlands	0.34 %
Poland	2.65 %
Portugal	2.49 %
Romania	1.37 %
Slovakia	2.04 %
Slovenia	1.19 %
Spain	1.25 %
Sweden	0.49 %
United Kingdom	0.37 %
Non-EU	0.04 %
Other	0.02 %
Earmarked	0.01%
EU-27	0.86%

Source: EU Budget and Financial Report 2007.

4 – 2 – D Structural aid to Iceland

Some of the money Iceland would pay to the EU comes back as structural aid, (support for cohesion and competitiveness, including research and technological development). Structural aid is channelled through the Cohesion Fund, the European Regional Development Fund (ERDF) and the European Social Fund (ESF).[81] A EU member country producing less than 90% of the Union's average can receive structural aid, but Iceland does not fulfil this criterion, having a GDP per capita higher than the EU average. A region in the EU, which produces less than 75% of the EU average GDP per capita, is eligible, but we are not aware of any Icelandic regions fulfilling this criterion either. Structural aid based on

[81] Besides structural aid, the other main EU spending is through the Common Agricultural Policy, where the main instrument is the European Agricultural Guidance and Guarantee Fund (EAGGF), which in 2007 was split into the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD). Agriculture is discussed in chapter 6.

the rule of less than 8 inhabitants per square kilometre applies to large parts of the Icelandic countryside and to the country as a whole (roughly 300 000 inhabitants on 103 000 square kilometres, with about half of the population in the capital city). Iceland is therefore likely to be considered a sparsely populated region, remote region, and with harsh climate, but not as a poor country or poor region.

The EU Budget and Financial Report for 2007 shows recipients of EU funds:

- Of Denmark's total EU allocations, 81% is for agriculture[82] and 16% for structural aid (cohesion and competitiveness, including research), the rest being minor items;
- Of Finland's total EU allocations, 68% is for agriculture and 29% for structural aid (cohesion and competitiveness, including research), the rest being minor items;
- Of Sweden's total EU allocations, 67% is for agriculture and 29% for structural aid (cohesion and competitiveness, including research), the rest being minor items.

Structural aid is generally intended for poorer members of the Union. It is therefore not surprising that the Nordic countries receive less in structural aid than in agricultural subsidies, considering that they are well developed and with relatively high income per capita. With large sparsely populated areas, Iceland resembles Finland and Sweden much more than Denmark. In per capita terms Finland's structural aid (cohesion and competitiveness) is 79 Euros per citizen (416.6 million Euros / 5.3 million citizens) and Sweden's structural aid (cohesion and competitiveness) is 53 Euros per citizen (486.2 million Euros / 9.2 million citizens). In EU accession negotiations, based on economic and geographic comparison, Iceland would undoubtedly be considered on similar terms as Finland and Sweden, just like the Baltic states, East European states, and the Mediterranean states are often considered like groups. Assuming that Iceland would receive similar structural aid as Finland and Sweden, it would amount to between 15.9 million Euros (53 Euros x 0.3 million citizens) and 23.7 million Euros (79 Euros x 0.3 million citizens) per year.

[82] Natural resources in EU jargon. In the EU natural resource budget, approximately 99% is agricultural and rural support, the remaining 1% is spent on fisheries and environmental issues.

4 – 2 – E Concluding remarks on government expenses

It is clear that richer member states tend to pay more to the EU budget than they get back in direct payments, and vice versa, the poorer states tend to receive more than they contribute. From a socialist's viewpoint this is fair, but not everybody shares that idea and many will say that people (and states) should work for their own money but not live on subsidies. This is open to discussion, but the EU aid is not intended to foster laziness and dependency, but to promote the coherent functioning of the Union by reducing disparities. EU policies are not likely to change drastically in the near future and Iceland would clearly have a net contribution to the EU close to ¼ % of GNI (or GDP).

State expenses stemming from EU membership are not necessarily correlated to macro economic welfare gains or losses for society as a whole, as we will show in the following chapters. We shall therefore look at the question if abandoning the EEA for EU membership would cause other net welfare changes that would outweigh the direct costs. The first question to ask is if the Icelandic state budget will not benefit from EU membership, who will benefit from EU membership? The answer could be citizens and businesses (corporations). In the rest of this study we shall therefore elaborate on the changes EU membership would bring to Iceland, beyond the participation in the Union budget.

4 – 3 The EU Customs Union

In principle the EU Customs Union, which is not covered by the EEA agreement, should be discussed in a chapter on its own, just as we treat the Economic and Monetary Union in chapter 5, Agricultural Policy in chapter 6 and Fisheries Policy in chapter 7. However, the Customs Union is delegated to this sub-chapter because we find it less important than the other common polices that are not included in the EEA. According to Statistics Iceland, Icelandic customs duties during the last 10 years have been between 0.30% and 0.42% of Iceland's GDP, and in the same period they have on no occasion reached 1% of government revenue.[83] Furthermore, approximately ¾ of Iceland's foreign trade is with other members of the EEA and therefore already free from customs duty. The exception is agricultural products, which are subject to several restrictions and discussed in detail in chapter 6.

Balassa (1961) notes that economic integration can take several forms that represent varying degrees of integration. These are (1) free-trade area, (2) customs union, (3) common market, (4) economic union, and (5) complete economic integration. In a (1) free trade area, tariffs (and quantitative restrictions) between the participating countries are abolished, but each country retains its own tariffs against non-members. Establishing a (2) customs union involves, besides the suppression of discrimination in the field of commodity movements within the union, the equalisation of tariffs in trade with non-member countries. A higher form of economic integration is attained in a (3) common market, where not only trade restrictions but also restrictions on factor movements[84] are abolished. An (4) economic union, as distinct from a common market, combines the suppression of restrictions on commodity and factor movements with some degree of harmonisation of national economic

[83] Excise duty ("vörugjald" in Icelandic) is a different issue from customs duties. Iceland has excise duty on several products, e.g. cars, sugar and sweets, some electric appliances, some construction materials, etc. This duty is levied on both Icelandic and imported goods, as long as they fall into the taxable categories. However, the Icelandic excise duty has traditionally been aimed at goods that are not produced domestically and we believe that the excise system would have to be reconsidered if Iceland joins the EU Customs Union. Some goods that are easily controlled can continue under the current system, e.g. cars upon registration, but e.g. DVD players cannot, as consumers are free to import from other EU member states goods for own consumption, without duties or formalities, subject to a reasonable maximum.

[84] Factors such as labour, services and capital.

policies, in order to remove discrimination that was due to disparities in these policies. Finally, (5) total economic integration presupposes the unification of monetary, fiscal, social, and counter cyclical policies and requires the setting up of a supranational authority whose decisions are binding for the member states.

The EEA is a mixture of the variations of economic integration mentioned by Balassa (1961). The EU part of the EEA can be defined as being somewhere between "economic union" and "total economic integration", but the EFTA part of the EEA is not in a customs union and only allows free trade in industrial goods and services. There is no common external customs tariff for the whole of the EEA, only within the EU. The EEA allows movement of factors such as labour, services and capital, but it does not have a monetary (or fiscal) union. The EFTA-EEA states apply EU trade rules and directives. As such, the EFTA-EEA states are for the largest part participating in the EU Common Market, with the exception of agriculture and fisheries, which are only partially within the scope of the EEA. Under the assumption that the current Icelandic excise system would be unchanged, this means that if Iceland joined the EU, consumers in Iceland would in principle have industrial goods and services from the EU at the same price as today, but industrial goods from outside the EU would be subject to EU customs duties, which sometimes vary from Icelandic duties. To complicate matters, a free trade area can be used to import goods into a common market by choosing the country with the lowest tariff and then sell the goods onwards. To avoid such circumvention of customs duties, there are rules concerning the origin of products and minimum requirement for goods to be changed or worked on by the "intermediary country", in order to avoid the EU or the EFTA-EEA countries being used as a cheaper gateway to the Common Market. Administratively this is more burdensome than a customs union with a common external tariff.

The Cecchini Report "The Costs of Non-Europe" (Cecchini et al. 1988) lists and tries to estimate the benefits of a single European market. Cecchini et al. (1988) discuss Europe's diverse markets (as they were in 1988), border controls, government protectionism in procurement, diverging technical standards, blocks to trans-border business activity, the costs for the service sector and costs in the manufacturing sector. This work was important at the time, but it was forward looking, where today there are some lessons already learned on the effects and results of the Single Market. Cecchini et al. (1988) note that customs related costs can result in an extra expense for many companies of up to a 25% of their profits. Needless to say, such extra costs are often passed on to the

consumers. The Cecchini Report estimated that the EU Single Market (of 1992) would increase EU output by between 2.5% and 6.5%. Baldwin (1989) finds that since Cecchini only estimated one-time effects on productivity and output, by adding medium-term growth effects caused by higher productivity, increased savings, and a better investment climate in Europe, these figures could be doubled. Matthews (1999 lecture) repeats some of Cecchini's figures. He estimates that removing barriers would increase the EU GDP by:

Table 8. Effects of trade barriers on EU GDP

Barrier removed:	% increase in EU GDP:
1. Trade barriers (frontier controls, quota restrictions, cost incr. barriers):	0.2-0.3%
2. Barriers affecting production (market entry barriers):	2.0-2.4%
3. Barriers preventing reaping the benefits of economics of scale:	2.0-2.1%
4. Barriers that allow inefficiency and monopolies to exist:	1.6%
Total effect:	5.8-6.4%
Total amount:	171-187 billion (ECU)[85].

Source: Matthews (1999).

Although the figures mentioned in Table 8 above may appear impressive, corporations, entrepreneurs, and other businesses within the EFTA-EEA already face competition from the EU since the EEA agreement provides for a free flow of capital, services, persons and industrial goods. As such, to a large extent, these benefits are already there for the EFTA-EEA states. Considering this, the felt effects in Iceland from joining the Customs Union are likely to be considerably less than Table 8 indicates, simply because the EEA already extends most parts of the EU single market to the EFTA-EEA states. It is also worth noting that non-tariff barriers have been removed on intra EEA trade, except on agricultural products, where Icelandic food, plant and veterinary rules sometimes obstruct imports to Iceland.

Kristjansdottir (2005) studied exports from Iceland using a gravity model of trade. In the case of Iceland, size and distance are important factors. Developing this idea further is not an easy task. Iceland is not a total outsider trying to join the EU, and the EFTA-EEA states and the EU are not two trade blocks, but one giant free trade area (less agricultural and fisheries products for the EFTA part). Theoretically it should be possible to make a model showing duty on Icelandic imports from outside

[85] Year 1999 figure. 1 ECU (European Currency Unit) = 1 Euro.

the EEA and compare the tariffs on these imports to the EU tariffs. The nomenclatures and customs coding system of both the EU and Iceland are based on the World Customs Organisation (WCO) model. However, our research showed that of the many thousands of entries in the Harmonized Commodity Description and Coding Systems of the WCO, some sub-sub-categories did not match completely between the EU and Iceland. A human expert assessment would be required to decide on a case-by-case basis which sub-sub-category a product should go into. Faced with this dilemma, we informally discussed this with both with the Icelandic Ministry of Finance and the Icelandic Directorate of Customs. Our conclusion is that this could be a process that may take several man-years of work. Even if Iceland joins the EU, a case-by-case comparison will most likely not be done. Rather, the EU customs tariff coding and duty level will just replace the Icelandic system. Despite the above mentioned difficulties in estimations, we will try to quantify the change through some examples. Some random checks on several customs tariffs and product categories in the EU and in Iceland are shown in Table 9 below and on next page.

Table 9. Customs duty on selected products in EU and in Iceland

Category [86]	EU [87]	Iceland [88]
Coal (including several subcategories)	0 %	0 %
Aluminium powder and flakes	0 % - 5 % depending on origin	0 %
Silver powder	0 %	0 %
Vacuum cleaners (various sub categories according to type, power, etc.)	0 % - 2.2 % depending on origin	0 %
Video and DVD players (including sub categories)	0 % - 13.9 % depending on origin	7.5 %
Ladies leather shoes (selected types)	0 % - 8 % [89] depending on origin	15 %

Table continued on next page

[86] Because of the numerous sub categories within each product group, we are not in a position to guarantee that nothing has been omitted. Importers should check an up-to-date customs code before importing.

[87] Some countries enjoy a reduced tariff into the EU for certain goods. When a range is shown, zero generally refers to a free trade agreement and the higher number to a third country tariff. Reduced preferential tariffs may be somewhere between, depending on the type of goods and their origin.

[88] The numbers in this column apply to goods from countries where Iceland does not have a free trade agreement.

[89] Definitive anti dumping duty of up to 16.5 % (China).

Table continued from previous page		
Self propelled artillery weapons	0 %	7.5 % [90]
Particle wood for floors, made of bamboo	0 % - 10 % depending on origin	0 %
Sawed, coniferous, planed wood	0 %	0 %
Vaccines for humans	0 %	0 %
Inflatable vessels for pleasure and/or safety	0 % - 2.7 % depending on origin and size	0 % - 10 % depending on intended use
Polyethylene plastics with weight volume ratio of less than 0.94	0 % - 6.5 %	0 %

Sources: EU TARIC (2010) and Icelandic Directorate of Customs (2010).

The selected examples in Table 9 (above and on the previous page) show that customs tariffs on goods from third countries can vary between Iceland and the EU by a few percentage points (only a small part of the tariffs reviewed are reproduced in Table 9). It is common to see EU and Icelandic tariffs ranging from zero and up to 15% on goods from third countries, however, as the examples in Table 9 show, there is not necessarily a correlation between EU and Iceland. If Iceland adopts the EU customs tariffs, some goods from third countries will consequently become proportionately cheaper or more expensive, depending on if the EU tariff is lower or higher than the Icelandic tariff. We have not found any cases in the EU TARIC or in the Icelandic Customs Directory where the differences are more than a few percentage points, although we cannot exclude that on some of the thousands of goods listed, this could be the case. The relative similarity in keeping tariffs low is in fact not surprising, considering the GATT and WTO. If we develop this knowledge further and take into consideration that Iceland already enjoys a free trade agreement (FTA) with the EU, which indeed covers approximately 75% of Iceland's total foreign trade, the overall macroeconomic effects of joining the EU Customs Union will be considerably smaller than the tariff change on individual goods originating from countries not having an FTA. Based on these facts, we assume that by joining the Customs Union, administration of trade will be simpler, but it is not likely to bring major changes in trade of industrial goods or services on the whole, although some individual goods may move up or down in price by a few percentage points. Nevertheless, the only way to fully test this assumption is to compare the EU and Icelandic

[90] This item does not physically exist in Iceland since the country has no army, but it shows the details (and perhaps absurdity) of the customs code. Only governments can buy this item.

customs tariffs, - product by product, - something that cannot easily be done without a small specialised task force. On the other hand, agricultural products, which are not covered by the EEA, are a different story from industrial products, as we show in chapter 6.

It should be pointed out that tourists and private citizens can import for their own consumption whatever they want between EU member states without any formalities, either in their personal luggage or via mail order (subject to a reasonable maximum value and special guidelines on alcohol and tobacco). This may in itself not be a decisive economic factor, but it puts pressure on importers to have more competitive prices and at the same time makes travellers feel at ease when returning home with full suitcases of newly purchased goods from Europe.[91] Last but not least, although excise duty is not related to imports only, we think that the current Icelandic excise system would have to be simplified as a result of abolishing customs and border controls on EU goods. If this is done, some goods currently sold in Iceland, - domestic products, EU products, or from beyond, - could show noticeable price changes up or down[92].

[91] There is no automatic customs control or duty on intra-EU borders, but that does not prevent police enforcement of banned goods, such as drugs or weapons.

[92] Down for those goods where the current excise duty would be removed, and up on those goods used to compensate government revenue lost by lowering or exempting other goods.

4 – 4 Foreign Direct Investment and Economic Specialisation

Some thought should be given to if leaving the EFTA-EEA arrangement for EU membership might influence foreign direct investment (FDI) in Iceland. Within the EEA there is a free flow of capital and this has greatly simplified Icelandic investments in Europe and vice versa. When considering if EU investments in Iceland would increase, or if Icelandic investments in Europe would increase by joining the EU, the principle of free flow of capital will not change.[93] Under the EEA agreement, Iceland participates in EU's principles of free investments, both on direct ownership of firms and on financial portfolios (with an exception concerning fisheries firms). Lizondo (1991) discusses several determinants of FDI: different rates of return, diversification, tax policy, government regulations, political stability, currency area, market imperfections, product cycles and other issues. None of this will change by leaving the EFTA-EEA arrangement for EU membership, - unless Iceland joins the European Economic and Monetary Union (EMU). As noted by Einarsson and Sturluson (2008), if Iceland were a member of the EMU, - which is not automatic for EU members (see chapter 5), - exchange rate risk will disappear and would possibly increase cross border investments. Einarsson and Sturluson think that if Iceland were a part of the EMU, FDI could in fact increase substantially. This is indeed likely, but Icelandic investments in other EMU countries could also increase. It is impossible to tell if net FDI would be zero, in, or out of Iceland by adopting the Euro as a currency, but investment speculation against the Icelandic currency's real value and pure exchange rate speculation would disappear, promoting only true capital investments. If Iceland enters the EMU at the right exchange rate, there should be no capital imbalances or net flows. Cross border investments would likely be more within the Euro-zone for those interested in pure production related long-term investments, and the speculators would most likely continue to use their portfolios in betting against non-EMU currencies, in a similar manner as Iceland was a source of speculative capital for FDI while the Icelandic Krona was strong up until 2007. It is interesting to note how unrestrained Icelandic investments abroad in the first decade of this century turned sour

[93] Free flow of capital in and out of Iceland was temporarily suspended in the wake of the 2008 banking collapse and the following economic crisis. Originally envisaged as a short-term measure, no fixed timetable for relaxation or abolition has yet been set.

in 2008, which led to a major domestic crisis for the economy, currency, banks and the government. Needless to say, this outward Icelandic FDI speculation came to an automatic end with the rapid depreciation (or correction) of the value of the Icelandic Krona in 2008 (figure 9 on page 99 shows the abrupt change in value of the Icelandic Krona vs. the Euro). Indeed, as discussed by Lizondo (1991), the strength or weakness of a currency can influence FDI flows substantially.

Attracting FDI sounds appealing. Ireland made an effort during the latter part of the last century to attract FDI through the use of grants as well as tax and financial incentives. However, this policy has lately come under scrutiny (see e.g. OECD 1994: OECD reviews of FDI; Ireland) because of the distortions the grants and other government incentives produced at the expense of developing local enterprises. A somewhat controversial Icelandic case has arisen in connection with a few foreign companies that have invested in aluminium plants in Iceland. These companies are indeed a source of FDI, but some Icelanders complain that the profits belong to the shareholders, regardless of their nationality, and as such large parts of the profits leave the country. Balanced FDI is an excellent source of know-how and foreign money, but having a country where foreigners own large parts of the infrastructure can also be considered neo-colonialism[94]. When considering investments from outside the EEA in order to gain access to the EU Common Market, this seems, at least so far, not to have materialized in any significant manner for any of the newest EU entrants, and for the period Iceland has been a part of the EEA this has not been a major factor.

It is clear that EMU membership would remove exchange rate risk on foreign investments (for better or worse), but future economic specialisation in Iceland remains rather uncertain. Despite the speculative nature of the subject, there are two issues that stick out that currently give Iceland some production advantages, and one where Iceland is at a disadvantage. The first advantage is that Iceland has relatively cheap hydroelectricity, which is currently being sold to electricity intensive industry such as the above mentioned aluminium production (the raw materials are imported and the products exported again). These firms are mostly funded through FDI. Investment from other EU and EEA countries in electricity demanding industry is free under the EEA agreement and might therefore not change much by joining the EU.

[94] Instead of states being the colonial powers, neo-colonialism refers to multinational corporations (economic force) and international organisations (political force) as being the colonial powers in the new world order.

Another advantage is Iceland's rich fishing grounds. Fisheries are discussed in chapter 7, but we should point out already that lifting restrictions on non-Icelandic investments in Icelandic fisheries companies is not likely to increase investments in the fisheries sector as such because the sector remains overcapitalised, given the current restrictions on catch quotas. Nevertheless, the possibility of foreign ownership of some of the fisheries companies could push their share price upwards and increase their market value (but not intrinsic value).[95] Lastly, a particular Icelandic disadvantage is that some parts of Icelandic agriculture are not suited to the country's semi-arctic location and as suggested in chapter 6, other European countries with warmer climate have an advantage in some sectors of the food production. This would change by joining the EU Common Agricultural Policy, which is presently excluded from the EEA provisions on free flow of goods. Leaving the EFTA-EEA arrangement and joining the EU would therefore somewhat increase specialisation in Icelandic agriculture (or perhaps reduce the domestically produced diversity through more competitive imports) and accordingly increase general welfare, but we find it highly speculative to predict other industries' future.

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[95] Icelandic law on foreign commercial investments (law no. 34 of 1991) currently restricts non-Icelandic ownership of fisheries firms. The same law also limits some strategic investments in the energy sector to EEA citizens and entities.

5. Economic and Monetary Union (The Euro)

This chapter is about the Euro. One of the driving factors behind the Icelandic European Union membership application in mid-2009 was Iceland's expectation that being a part of the European Economic and Monetary Union (EMU) would stabilize domestic financial markets following the turbulences in 2008 and 2009. Becoming a European Union member does not automatically mean that the new member will have the Euro as its currency. Using the Euro as a national currency requires specific membership in the EMU.[96] The EU expects, however, that new EU members make an effort to fulfil the criteria to join the EMU, unless they negotiate an opt-out.

[96] Newly independent Montenegro, which is not (yet) EU member, has unilaterally adopted the Euro as their currency. Following the disintegration of Yugoslavia, the Montenegrin economy and currency was in a bad shape, the largest banknotes printed under the Yugoslav hyperinflation of the early 1990s having a nominal value of 500 billion Dinars (billion meaning thousand millions, 1 000 000 000. However, since Montenegro is neither a member of the EU nor of the EMU, they receive no economic consideration from the EU or from the European Central Bank. This is less than ideal, but since German Marks (later Euros) were the "de facto" hard currency in many parts of former Yugoslavia during the economic collapse of the civil war years, adopting the Euro was merely accepting the "de facto" currency already in widespread use. Unilaterally adopting the Euro is not an option for Iceland, neither politically nor economically. Politically the EU has indicated that the Union does not favor unilateral adoption and such actions might have negative political consequences. From an economic point of view the Icelandic economy is functioning, despite the current recession/depression. The Icelandic Krona lost half of its value compared to the Euro during 2008, but it is far from being a worthless currency like civil war Yugoslav Dinars. By legally joining the EMU, all Icelandic Kronas will be exchanged for Euros at no direct cost for the government other than printing new notes. With a unilateral adoption, the Icelandic Central Bank's foreign currency reserves would be used to exchange Icelandic Kronas for Euros intended for domestic use. This means that the reserves would be much smaller and thus will yield much less interest. In other words, the unilaterally adopted Euros would be on loan and would cost the state an interest to be paid to the foreign lenders. Iceland cannot legally print and issue Euros without participating in the EMU.

5 – 1 Discussion on Monetary Unions

If Iceland moves from the EFTA-EEA arrangement over to full EU membership, consideration of the EMU is important. Numerous works have been presented on this subject, indicating that it is not at all a simple economic calculation. Levitt and Lord (2000), "The Political Economy of Monetary Union", published as a part of the European Union Series, describe the build up to the EMU, its economics and working mechanisms. Levitt and Lord are descriptive, perhaps in line with other publications from the same series, rather than actually debating the pros and cons of the EMU. Nevertheless, the general debate on currency areas is not new. Already in 1961, Mundell (Mundell 1961) did some pioneering work on currency areas. His paper "A Theory of Optimum Currency Areas" was written in a period of fixed exchange rates (based on the Bretton Woods system), which to a large extent have been abandoned in Western economies today. However, ten years later Mundell (Mundell 1971) wrote "Monetary Theory, Inflation, Interest and Growth in the World Economy". This was written during a period when changes in the international monetary system were under way, including abandoning the gold standard and fixed exchange rates, while inflation was a common issue (or problem, depending on opinion). Although perhaps somewhat outdated, it makes an interesting compliment to the discussion on contemporary monetary policy. Mundell's paper from 1997 (Mundell 1997) "Currency Areas, Common Currencies and EMU" includes a discussion on EMU. In that paper he defines a currency area as an area involving two or more currencies fixed to each other, which differs from a monetary union, which includes an agreement to share a common currency. The Optimum Currency Area theory substantially influences the arguments for and against joining the EMU.

The Economics of Monetary Integration (second edition, De Grauwe 1994), and the updated fourth edition (De Grauwe, 2000), The Economics of Monetary Union, where the title has been adapted to reflect the status of the Euro-zone, discusses the pros and cons of a common currency. The sixth edition of Economics of Monetary Union (De Grauwe, 2005), is a reflection of the ongoing process of the evolution of the monetary union. It is not a fundamental change of the book, but an update to better reflect on current EMU issues as well as on lessons learned. De Grauwe is very open-minded towards the arguments for and against monetary unions and how to decide on the size of currency areas.

De Grauwe finds that the theory on optimum currency areas[97] is lacking because economic shocks are more likely to be sector specific rather than country specific. This may be true for Europe, but in the case of Iceland, considering the small size and non-diversified economy, it could be a mixture of both country and sector shock. De Grauwe lists the benefits of a common currency, which includes elimination of transaction costs, exchange rate risk and price discrimination, although he warns not to be overoptimistic on economic growth stemming from a monetary union. He is very detailed in his discussion of the various theories on optimum currency areas. As already mentioned, De Grauwe refers to Mundell's old but groundbreaking article from 1961 on "A Theory of Optimum Currency Areas" where a shift in demand causes asymmetric shocks and how floating exchange rates and independent national monetary policies can ease the transition and economic consequences of an economic shock. Since Mundell's 1961 article, many changes have taken place, but there are still several economists who argue in favour of different currencies for given areas, even to the point that some large countries could be better of economically if they had several monetary zones. We should draw attention to that there are economists who argue, based on the theory on optimum currency areas, that a European Union of 27 members is not necessarily an optimal currency area. De Grauwe points out that a non-integrated area does not in itself favour a monetary union. But he also emphasizes the arguments for a monetary union, such as integration, which supports monetary union, and vice versa that a non-monetary union slows integration. Furthermore, as mentioned above, De Grauwe notes that shocks are often more sector specific than country specific, making monetary policies rather ineffective to deal with the economic problem. He also notes the fact that fiscal polices are not as effective as the Optimum Currency Area theory would indicate as that would lead to problems of sustainability which as a consequence would force countries to run budget surpluses for several years as a compensation. We should also draw attention to that De Grauwe notes that the Central European countries who have joined the EU all have indicated that they wish to join the EMU because the exchange rate volatility makes it difficult for them to stabilize their economies. Indeed this last part is something we find applies to Iceland.

We accept that Iceland is especially sensitive to sector specific shocks because of its small and relatively non-diverse economy (see e.g.

[97] Meaning different areas with different and independent currencies, rather than a common currency.

Table 3 on page 44). The ex-ante estimation here may be very difficult, although after a shock we have no doubt that many authorities on this subject will say "we told you so" or "you should have known better". Human memory on the ups and downs of economic cycles can often be very short. An example is unexpected fluctuations in fish catches as shown in chapter 7, Figure 22, on page 204. However, as shown in Table 3 on page 44, fisheries are less significant than a decade ago and economic diversification in Iceland appears on the increase. Economic cycles, which span several years of relatively rapid growth, followed by a few years of limited or no growth, are an economic and social fact.[98] Attitudes towards economic policies are influenced by at what stage the economic and business cycle is and discussion on monetary unions are no exception. It has been interesting to note that when the Icelandic 2000-2007 economic cycle came to an end in 2008, political voices jumped up like mushrooms claiming that joining the EMU and adopting the Euro would solve Iceland's economic problems. As discussed later, in part 5-2 on the Criteria to join the EMU, national economics have to be in order before it is possible to adopt the Euro. In any case, joining the EMU takes a few years and by then a new economic and business cycle will most likely have started in Iceland anyway.[99]

When studying arguments for and against currency areas and monetary unions, we have to ask ourselves if the economic discussion is just academic. The fact is that the EU aims for a Monetary Union and being outside has a political price. A monetary union is related to the political goal of nation building and in the case of the EU it is a part of the European unification process. Although some academic studies conclude that for instance the United States is not an optimum currency area (e.g. Ghosh and Wolf (1994)), when comparing Europe to the United States, we may ask ourselves if the United States would be an economic superpower if it had several different currencies with the different zones having different monetary and fiscal policies? - The answer is: Probably not. - Also, would the United States have the privilege of printing the "World Currency" if the US Dollar did not exist, but instead there were e.g. a Texas Dollar, a New York Dollar, a Montana Dollar, a California Dollar, etc, depending on how the Optimal Currency Area theorist would

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[98] Economic cycles (business cycles) are also controlled by psychological factors, i.e. if entrepreneurs, businessmen, policy makers, and consumers are in a positive "bull" mood or negative "bear" mood.

[99] Most economic cycles have longer growth periods (i.e. 3-10 years) than recession periods (i.e. 1-3 years). A notable exception is Japan at the end of the 1990s, with a very long period of stagnation.

like to divide the country? - The answer is: Almost certainly not. - Would individual states in the United States be better of if they belonged to different currency areas such as is the case in e.g. South America. - The answer is: Possibly yes and possibly no, but since the United States is one country it does not matter as much as it would in a country union such as the EU, since labour mobility is much larger within a country than between countries, mainly because of the language and cultural barrier between countries. In the case of the EU the Union is not (or at least not yet) one country. Although the intra-European cultural barriers are diminishing with increasing travel and education, the language barrier is still a substantial hindrance in labour mobility.

"The Political Economy of Monetary Union", under the introduction of Paul De Grauwe (2001) is a collection of papers spanning a timeframe from 1961 (Mundell) to the end of the 20th Century and focuses on optimum currency areas, fiscal policies in a monetary union, and the role of a central bank in a monetary union. Such papers are of interest for academics and Central Bankers, but the average person would like to know how this benefits them. The answer is that a common currency increases trade, and increased trade benefits consumers. When trying to estimate effects of increased trade, Frankel and Romer (1999) in their paper "Does Trade Cause Growth?" state that it is difficult to answer how international trade affects standards of living. They find that 1% increase in trade over GDP increases income per person by 0.5 - 2%, but perhaps to stay on the safe side, conclude with "at least" 0.5 percent. They also find that increasing population and area by 1%, increases income by 0.1 - 0.3%. Accepting to err on the safe side may seem like a prudent and cautious approach. We accept in general that trade increases net welfare. We also accept and recommend a cautious approach when estimating total net welfare change from purely theoretical models, although empirical evidence is not easy to work with either because of all other factors involved in increasing or decreasing net welfare. We prefer to follow the cautious approach, although underestimations are just as wrong as overestimations. Erring on the "safe side" can lead to wrong conclusions and wrong advice to political decision makers, just as exaggeration can. Frankel and Rose (2000) and Frankel and Rose (2002) have slightly downplayed the initial estimate and find that 1% increase in

trade between countries in a monetary union increases income per capita by (at least) 1/3 % over a 20 year period[100].

Frankel and Romer (1999) findings lead directly to Rose (2000), who discusses the effects of a common currency on trade and ultimately on welfare gains. Rose estimates the effects of a common currency huge, possibly increasing trade up to three times.[101] Rose draws attention to that many other studies have looked at reduced exchange rate volatility on trade and many of them find the influence minimal. Since Rose's estimation, pointing towards huge increases in trade may sound surprising, we would like to quote a part of Rose's (2000) conclusion: [quote] "One of the few undisputed benefits of joining a currency union is the encouragement of trade. That effect has not been quantified until now. Instead, economists have used the much smaller effect on trade of eliminating exchange rate volatility. As a result, the current consensus is that currency unions have hardly any effect on trade. The case for a common currency is weaker accordingly. This paper [Rose's paper (2000)] confirms that such scepticism is unwarranted, so that a potent argument in favour of currency unions has been under-stated in the literature. Data for the many countries that share currencies in the real world point to an unambiguous conclusion. Even after taking a host of other considerations into account, countries that share a common currency engage in substantially higher international trade."

Because of Rose's initial large estimation (three times more trade) Rose has been somewhat criticized and as discussed by De Grauwe (2005), the actual increase in trade stemming from a common currency may be in the vicinity of 20% to 40%, which indeed is also very significant, although less than Rose's initial estimate. The bottom line we use in our own estimation is that a common currency increases trade and increased trade increases net welfare. Exactly how much is subjective.

To mention some of the literature which followed Rose (2000), Rose and van Wincoop (2001) in "National Money as a Barrier to International Trade: The Real Case for Currency Union" state that while the Europeans are proceeding with the EMU and many countries in America are proceeding with dollarisation, conventional economic wisdom is that the costs are high as the members of the currency unions cannot employ domestic monetary policy to smooth the economic up and

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[100] Rose has informed us (2009) that when he wrote "income" per capita, he meant GDP per capita. We should draw attention to that there are more factors in GDP than just income from work.

[101] Rose uses the expression "trade". Investment is likely to increase as well.

downs of business cycles. Rose and van Wincoop find that conventional wisdom might be wrong, as national money seems to be a significant barrier to trade. They estimate that EMU will cause European trade to rise by 50%. Rose and Engel (2002) in "Currency Unions and International Integration" continue along the line that members of currency unions are more integrated than countries with their own currencies, that they have more trade and less volatile real exchange rates than countries with their own money, and that economic cycles are more synchronized in currency unions. This is somewhat in line with what De Grauwe (2005) has mentioned, that currency unions support themselves and non-currency unions argue against one common currency for all.

Rose (2000) produced many reactions and Nitsch (2002) ("Honey, I Shrunk the Currency Union Effect on Trade") discusses Rose's finding that currency unions raise trade by a factor of three. Rose's reply is in the same issue of The World Economy, (April 2002) under the name "Honey, the Currency Union Effect on Trade hasn't Blown Up". The essence of those two papers is that Nitsch finds that a three times increase is an overestimate which could be reduced by perhaps one half. Nevertheless, from our viewpoint, that is a substantial increase anyway. While discussing Nitsch, we should also add that Nitsch (2000) in "National Borders and International Trade: Evidence from the European Union" notes that national borders in the EU still have a decisive impact on trade patterns, which indeed just underlines the complexity of the issue of estimating trade effects. Although Rey (2001) is perhaps a bit outside our scope, in the context of national borders we would like to repeat her quote taken from political economist John Stuart Mill (1848): "So much of barbarism, however, still remains in the transactions of most civilized nations, that almost all independent countries choose to assert their nationality by having, to their own inconvenience and that of their neighbour, a peculiar currency of their own."

It is interesting to note that Micco et al. (2003) find that the effect of the EMU on bilateral trade between member countries ranges between 9% and 20% when compared to trade among non-EMU countries and between 5% to 10% when compared to trade between all other pairs of countries. Bun and Klaassen (2002) estimate the effect of the Euro to increase trade by 4% in the first year and cumulating to around 40% in the long run. De Nardis and Vicarelli (2003) estimate the effect to increase trade by 2.6% to 6.3% and Baldwin (2005) by 5% to 10%, although this estimation is likely to change in the coming years as new data arrives. All are well below Rose's estimate, but all agree that the Euro as a single currency increases trade.

Not surprisingly, central banks and monetary funds have a vast interest in currency management and effects of currency unions. Micco et al. (2003) wrote their paper under the umbrella of the Inter-American Development Bank, Horvath (2003) wrote a Bank of Finland discussion paper and Mongelli (2002) in the European Central Bank working paper series. We would like to note that Horvath (2003) is of the opinion that deciding on an optimum currency area is prohibitively difficult and that decades of academic efforts have brought little towards its solution. Mongelli (2002) discusses the evolution of the Optimum Currency Area theory during the last four decades, starting with the "pioneering phase" which put the theory and its properties forward, then the "reconciliation phase" when its diverse facets were combined, then the "reassessment phase" and finally the "empirical phase". He finds that the balance of judgments has shifted in favour of currency unions and they are now deemed to generate fewer costs in terms of loss of autonomy of domestic macroeconomic policies and there is greater emphasis on the benefits. Perhaps most importantly, Mongelli asks the question if countries form currency unions because they trade a lot or if countries start trading more because they form a currency union. This is the typical question about what comes first, the hen or the egg.

While discussing the Economic and Monetary Union, we would like to mention Molle (2001) and Gros and Thygesen (1988). Molle (2001) is very thorough in his book on the "Economics of European Integration". He not only describes the economics of the four freedoms of the Common Market, (goods, services, labour and capital), but he also devotes significant effort into analysing sectors of activity, where perhaps to this study the part on agriculture is of particular interest (agriculture is discussed in chapter 6). Gros and Thygesen (1988) explain the European Monetary System and in 1992 (Gros and Thygesen, 1992) discuss issues related to monetary integration, which we would like to note is a EU goal but not an EFTA goal. This includes microeconomic benefits of fixing exchange rates, elimination of transaction costs, elimination of information costs and price discrimination, and also the cost of introducing a common currency. In our assessment, these are very important issues for an EFTA-EEA member when considering EU membership because EFTA and the EEA per se, do not have monetary integration. This is not to say that all EU members will accept a common currency in the future, although we believe that it is just a question of time. It is assumed that if Iceland joined the EU, joining the EMU would also take place at the earliest opportunity and the estimations we show in this study are based on that assumption.

5 – 2 Criteria for joining the Economic and Monetary Union

Before discussing the effects in Iceland if it joined the European Economic and Monetary Union (EMU), it is worth investigating to what extent Iceland fulfils the criteria to join the EMU. The four convergence criteria to join the EMU are:

(1) Price stability.
(2) Government finances.
(3) Exchange rates.
(4) Long-term interest rates.

(1) Price stability.

The inflation rate of a given member state should not exceed by more than 1½ percentage points that of the three best-performing member states in terms of price stability during the year preceding the examination of the situation in that member state. The inflation in Iceland (based on consumer price index) was around 2% in 2003, close 4% in 2004 and 2005, near 5-6% in 2006 and 2007, and in 2008 it was 12% (year's average), but approached 18% towards the end of 2008 (Central Bank of Iceland and Statistics Iceland, 2009). The Icelandic government's aim (Central Bank's aim) is to try to keep the inflation less than 2.5% per year. In the same period and up until 2007 the inflation in the Euro-zone as a whole has been between 2% and 2.5% per year (measured by harmonised index of consumer prices) (European Central Bank and Eurostat, 2009). Nevertheless, in mid-2008 the Euro-zone inflation peaked at 4%, although at years end it was back to approximately 2%. This indicates a slight worldwide inflationary trend, but not nearly as much as in Iceland. Under the current circumstances Iceland would have to apply considerable inflation reducing measures before entering the EMU in order to fulfil the price stability criteria. We should point out that since Iceland anyway is not in a position to participate in the EMU until there has been a change in the current political landscape, other economic criteria influence the counter-inflationary measures taken by the Icelandic authorities than price stability in the Euro-zone per se.

(2) Government finances.

(2.a) Annual government deficit: The ratio of the annual government deficit to gross domestic product (GDP) must not exceed (-) 3% at the end of the preceding financial year. If this is not the case, the ratio must have declined substantially and continuously and reached a level close to (-) 3% or, alternatively, must remain close to (-) 3% while representing only an exceptional and temporary excess. Table 10 below (Icelandic budget deficit/surplus as a percentage of GDP) shows that Iceland was well within this margin, even having a budget surplus in some years, all the way until 2008 when the economic bubble burst. 2008 shows a significant deficit and 2009 is expected to continue with a negative trend.[102]

Table 10. Icelandic budget deficit/surplus as a percentage of GDP

Year	Deficit (-) or Surplus in %
2000	1.8
2001	-0.5
2002	-1.3
2003	-1.8
2004	1.0
2005	4.4
2006	5.3
2007	3.9
2008	-13.1
2009	(Negative) [103]

Source: Statistics Iceland (2008, 2009 and 2010).

(2.b) Government debt: The ratio of gross government debt to GDP must not exceed 60% at the end of the preceding financial year. If this is not the case, the ratio must have sufficiently diminished and must be approaching the reference value at a satisfactory pace. As shown in Table 11 on next page (Icelandic Government debt as a percentage of GDP), Iceland was well within this range up until 2008, but the Euro-zone as a whole was in fact not, although in the years up to the adoption of the Euro, the Euro-zone came down at a "satisfactory pace" from over 70% in the late 1990s.

[102] The detailed consequences of the abrupt end of the 2000-2007 Icelandic economic bubble are not yet known, but preliminary data for 2009 shows a significant deficit.

[103] Ibid.

Table 11. Icelandic government debt as a percentage of GDP. (For comparison the Euro-zone is also shown)

Year	Iceland [104]	Euro-zone [105]
2000	29 %	69 %
2001	29 %	68 %
2002	27 %	68 %
2003	28 %	69 %
2004	27 %	70 %
2005	14.5 % [106]	70 %
2006	6.0 % [107]	69 %
2007	+ 1.5 % (surplus) [108]	67 %
2008	16.3 % [109]	67 %
2009	Unknown (see footnote)[110]	

Source: Statistics Iceland (2008 and 2009) and ECB / Eurostat (2009).

[104] This column is based on Statistics Iceland. Eurostat figures available for Iceland (up to 2004) differ slightly and generally show a debt ratio 10 percentage points higher than presented here. Eurostat does not show Iceland after 2004.

[105] Based on ECB/Eurostat data. Some other sources seem to indicate lower numbers for the Euro-zone with averages below 60%, e.g. the Icelandic Prime Minister's Economic Forecast for 2007 (Þjóðhagsáætlun of 2nd October 2006), which showed the Euro-zone in comparison to Iceland.

[106] End year figure. The situation improved through the year.

[107] Idem.

[108] Idem.

[109] Preliminary data.

[110] 2008 began well, but the downswing of the economic cycle is reversing the recent achievements of zero government debt. The collapse of the main Icelandic banks in 2008 is drastically increasing the government's liabilities/debt. At the end of 2008 Iceland got a credit line from the International Monetary Fund (IMF) valued at USD 2.1 billion. This amount is close to ¼ of the Icelandic annual GDP. Of this total amount, USD 827 million was made available immediately (approximately 10% of GDP). Furthermore, in the wake of the 2008 banking crisis, Iceland is both considering and taking bilateral loans from several nations, which if exercised to their full extent, could lead to an estimated total Government dept in 2009 of between half and one trillion (1 000 000 000 000) Kronas, which corresponds to between 50% and 100% of the annual GDP. With full employment and growing GDP this is not disastrous, but the economic problems are multiplied by the downturn in the economic cycle with falling production and increasing unemployment. To make matters worse, the loans are nominated in foreign currencies while the Krona keeps on losing value. These economic problems are further aggravated by the political fact that at the same time as the Icelandic taxpayer's burden is substantially increased, a few individuals have managed to accumulate assets worth hundreds of billions of Kronas, of which considerable parts have left the country. Nevertheless, this should be seen in context of the EU states, where government debt is often substantial and unemployment of a few percentage points is a constant problem, followed by a general global economic downturn.

(3) Exchange rates.

The member state must have participated in the exchange rate mechanism of the European monetary system without any break during the two years preceding the examination of the situation and without severe tensions. In theory, the fluctuation band of the currency should not exceed plus or minus 15%. In addition, it must not have devalued its currency on its own initiative during the same period. At this stage Iceland has not participated in the exchange rate mechanism and it would presumably only be done after the country had become EU member and intended to fully participate in the EMU. Figure 9 on next page shows how the exchange rate between the Euro and Icelandic Krona has evolved between 1999 and 2008. Figure 9 (on next page) indicates fluctuations of up to 20% from the 1999-2007 median.[111] However, in 2008 there was a large move in the exchange rate when the Krona lost close to half of its value versus the Euro. The Icelandic Central Bank's main objective has not been to stabilize the Krona versus the Euro and domestic economic considerations, such as low inflation, have had priority. Nevertheless, such a rapid fall causes some concerns and rapid exchange rate fluctuations give unexpected economic blows as imported goods rise rapidly in price, while exports give a much higher yield measured in Kronas. Furthermore, the burden of foreign currency nominated loans becomes more substantial. The terms "overvalued" or "undervalued" currencies are not based on exact figures since with floating exchange rates there is no fixed reference value. However, these terms are used to indicate trends and expected exchange rate movements. As noted before in Chapter 2, part 4, on Iceland, considering the Icelandic nominal GDP per capita in 2007 of 64 871 USD versus the Purchasing Power Parity (PPP) of 38 396 USD, it is clear that the Icelandic Krona was overvalued, which indeed showed itself in the high import-export ratio just before the economic fall. When joining the EMU, if exchange rate tensions have not shown up in the preceding two years before joining, it is technically possible to enter the EMU with an "overvalued" or "undervalued" currency. Entering the EMU with a theoretically "overvalued" or "undervalued" currency can have temporary negative economic effects. Nevertheless, it is necessary to draw the line somewhere and ultimately the EMU is a political decision but not a mathematical model. Up until

[111] As an interesting comparison, the Euro and the US Dollar have also had large fluctuations with moves up to 35% over and under the median through the last 10 years (since the creation of the Euro) (ECB (2009)). Nevertheless, although the Euro/Dollar swings have been substantial, they have not been nearly as rapid as with the Icelandic Krona.

2007, Iceland would likely have been in a position to fulfil the exchange rate criterion with its relatively stable (but overvalued) currency. However, with the rapid and uncontrollable fall in value of the Icelandic Krona in 2008, it would be difficult for Iceland to fulfil the requirement of exchange rate stability without a very stout political and economic support from other member states.

Figure 9. Exchange rate of one Euro vs Icelandic Krona from 1999 to 2008. (Part A and Part B use a different scale)

Part (A) 1999 to mid-2008

Source: European Central Bank (2008)

Part (B) 2008.[112]

Landsbanki Islands (2009)

[112] In October 2008 when the Icelandic Central Bank (temporarily) removed the Icelandic Krona from being freely convertible, the European Central Bank (ECB) removed it from its exchange rate listing. As of October 2008, Part B is a guideline only. In late 2008 the ECB listed 1 Euro as approximately 300 Kronas, while at the same time the Icelandic Central Bank listed it closer to 180.

(4) Long-term interest rates.

Nominal long-term interest rate must not exceed by more than 2 percentage points the rate of the three best performing member states in terms of price stability. The period taken into consideration is the year preceding the examination of the situation in the member state concerned. The Icelandic Central Bank current account[113] interest rates have been in line with the Euro-zone until the years 2005 and 2006 when the Icelandic rates have risen substantially compared to the Euro-zone (Table 12 below). As noted earlier, it is not the aim of the Icelandic Central Bank to mimic the Euro-zone in order to join the EMU, but to adjust domestic interest rates in line with domestic economic requirements, i.e. increase the interest rates when inflation rises. Although Table 12, below, shows relatively low Central Bank current account interest rates in Iceland up until 2005 and 2006, we would like to draw attention to that private banks in Iceland commonly charge their clients double this rate and often also link interest rates on loans to the consumer price index or foreign currency index. Needless to say, in order to join the EMU, current interest rates in Iceland would have to come down. With free flow of capital within the EEA, we are not in a position to explain the high interest rates in retail banking otherwise than by the exchange rate risk, where Figure 9 on the previous page shows that the Icelandic Krona can fluctuate very rapidly. By joining the EMU, this exchange rate risk versus the Euro would disappear.

Table 12. Nominal interest rates in Iceland and the Euro-zone

	Iceland [114]	Euro-zone [115]
January 2000	4.5%	4.0%
January 2001	6.9%	5.75%
January 2002	6.7%	4.25%
January 2003	3.3%	3.75%
January 2004	2.8%	3.0%
January 2005	6.25%	3.0%
January 2006	9%	3.25%
January 2007	12.75%	4.5%
January 2008	13.25%	5.0%
January 2009	15.0%	3.0%

Source: Icelandic Central Bank (2009) and European Central Bank (2009).

[113] Central Bank current account (banking): Banks' accounts at the Central Bank. (Commercial and retail banks are Central Bank's "clients"). Not to be mixed with Current Account in international macroeconomics, which refers to balance of trade and net international financial and investment flows.

[114] Icelandic Central Bank "current account".

[115] European Central Bank "marginal lending facility".

5 – 3 The Icelandic Economic Cycle[116] compared to the EU

Beetsma and Giuliodori (2009) point out that despite the relatively smooth introduction of the EMU, there have been periods of tensions because of misalignments in member states' business cycles. Frankel and Rose (1997/1998) find that monetary unions tend to lead to a higher harmonisation of business cycles than separate currency areas do. As such, the business cycle can be both exogenous and endogenous. Countries may satisfy the Optimum Currency Area theory criteria ex post, even if they do not ex ante.

Forecasting business cycles is particularly difficult. Studying the past is helpful, but that in it self cannot guarantee that future business cycles will be a repetition of previous business cycles.[117] In this part we will compare the Icelandic business cycle to the EU, Euro-zone and to selected European states. We want to see if Iceland differs from mainstream Europe, which under an assumption that the business cycle is exogenous would be an argument for a separate currency area. We will also study whether harmonisation increased in the Euro-zone after the introduction of the common currency, which could signify an endogenous business cycle. Table 13 (on next two pages) shows growth statistics with 3-month (quarterly) intervals in the EU, Euro-zone and Iceland. Furthermore, for comparison purposes we have selected Germany and France as major economic powers in the Euro-zone, and Finland and The Netherlands as examples of small Euro-zone economies. Greece is taken as an example of a small Euro-zone member, geographically, politically, economically and culturally farther away from Iceland than the other four examples shown.

[116] "Economic cycle" and "business cycle" are synonyms.

[117] A comparison can be drawn to floating exchange rates and stock market prices. It is a mixture of a cyclical move and a random number.

Table 13. Quarterly growth data comparison, from 2nd quarter 1997[118] to 3rd quarter 2009[119] for EU, Iceland, and selected countries (% change)

Gross domestic product - expenditure approach - Growth rate compared to previous quarter, seasonally adjusted. Q for yearly quarters (3-month periods).

	EU	Euro-zone	Iceland	Germany	France	Finland[120]	Nether-lands	Greece
1997 Q2	1.24	1.20	0.79	1.29	1.10	1.38	1.47	n/a[121]
Q3	0.67	0.68	0.61	0.34	0.85	1.94	1.17	n/a
Q4	0.99	1.03	-0.61	0.76	0.96	1.34	1.13	n/a
1998 Q1	0.71	0.72	0.67	0.97	0.93	1.02	1.02	n/a
Q2	0.40	0.44	6.33	-0.45	1.00	1.45	0.60	n/a
Q3	0.54	0.65	-0.40	0.33	0.53	1.13	0.75	n/a
Q4	0.20	0.36	3.88	-0.19	0.57	0.40	0.91	n/a
1999 Q1	0.96	0.89	1.28	1.09	0.64	1.14	1.70	n/a
Q2	0.61	0.63	-2.89	-0.04	1.01	0.83	0.99	n/a
Q3	1.19	1.21	0.86	1.28	0.97	0.92	1.21	n/a
Q4	1.17	1.17	1.54	1.06	1.37	1.87	1.43	n/a
2000 Q1	1.23	1.19	0.25	1.17	1.19	1.26	1.04	n/a
Q2	0.91	0.95	0.72	1.12	0.81	1.09	0.61	0.91
Q3	0.48	0.48	4.65	-0.05	0.37	1.37	0.52	0.36
Q4	0.73	0.68	1.19	0.08	1.08	0.55	0.85	0.77
2001 Q1	0.74	0.77	-5.60	1.01	0.55	1.34	0.47	1.66
Q2	0.07	0.09	7.97	0.08	-0.04	-0.39	0.50	0.82
Q3	0.08	0.22	-0.13	-0.18	0.30	0.25	-0.04	1.21
Q4	0.13	0.19	2.22	0.25	-0.45	-0.26	0.17	1.09
2002 Q1	0.23	0.34	-4.84	-0.40	0.72	0.47	-0.55	0.08
Q2	0.46	0.50	1.21	0.22	0.49	1.16	0.49	0.81
Q3	0.36	0.41	0.85	0.37	0.35	0.15	0.11	1.61
Q4	0.10	0.24	1.41	-0.19	0.01	1.02	-0.09	1.09
2003 Q1	0.03	0.20	3.44	-0.55	0.30	-0.33	0.22	2.81
Q2	0.00	0.19	-3.97	-0.15	-0.09	0.74	-0.33	0.63
Q3	0.51	0.59	-0.52	0.49	0.76	0.98	0.22	0.78
Q4	0.62	0.74	2.10	0.37	0.64	0.49	0.58	1.34

Table continued on next page

[118] Iceland does not show quarterly data before 1997.

[119] The latest data are preliminary figures and may be subject to minor adjustments.

[120] The data for Finland is subject to some revision.

[121] Greece does not show quarterly data before 2000.

Table continued from previous page								
	EU	**Euro-zone**	**Iceland**	**Germany**	**France**	**Finland**[122]	**Nether-lands**	**Greece**
2004 Q1	0.58	0.71	6.92	0.28	0.49	1.30	1.15	1.13
Q2	0.49	0.56	-1.04	0.08	0.73	0.88	0.42	1.67
Q3	0.36	0.36	0.22	-0.15	0.33	0.60	0.49	0.68
Q4	0.34	0.48	4.65	-0.01	0.84	1.40	0.20	1.03
2005 Q1	0.24	0.28	2.46	0.14	0.30	-0.08	0.10	-1.00
Q2	0.68	0.76	-0.92	0.58	0.28	0.57	1.16	0.78
Q3	0.66	0.68	3.30	0.69	0.62	1.72	0.89	1.26
Q4	0.54	0.62	2.44	0.21	0.55	0.71	0.45	1.97
2006 Q1	0.80	0.93	-0.76	0.85	0.61	1.63	0.82	-0.06
Q2	1.12	1.04	-1.07	1.48	1.07	1.25	1.54	1.98
Q3	0.63	0.65	2.41	0.92	0.04	0.84	0.22	1.16
Q4	0.87	0.86	5.77	1.00	0.66	1.00	0.82	0.63
2007 Q1	0.79	0.83	-5.11	0.32	0.75	1.26	1.14	1.80
Q2	0.40	0.47	6.47	0.32	0.40	1.04	0.71	0.69
Q3	0.61	0.63	2.56	0.80	0.67	0.70	0.84	0.84
Q4	0.34	0.46	-1.77	0.14	0.30	0.67	1.49	0.52
2008 Q1	0.80	0.78	2.88	1.59	0.49	0.22	0.95	0.67
Q2	-0.31	-0.18	-6.03	-0.57	-0.44	0.92	-0.04	0.62
Q3	-0.41	-0.47	1.76	-0.32	-0.24	0.19	-0.76	0.13
Q4	-1.90	-1.93	3.22	-2.44	-1.52	-4.12	-1.03	-0.69
2009 Q1	-2.46	-2.43	-5.10	-3.54	-1.36	-4.90	-2.43	-0.53
Q2	-0.12	-0.25	-0.42	0.44	0.33	-0.28	-1.01	-0.09
Q3	0.42	0.31	-5.68	0.73	0.26	0.30	0.45	-0.42

Source: OECD (2010)

In order to interpret the data shown in Table 13 (above and on previous page), we have calculated the correlation[123] between various periods and areas, shown in Table 14 on next page.

[122] The data for Finland is subject to some revision.

[123] The correlation coefficient ranges from −1 to 1. A value of 1 implies that a linear equation describes the relationship between X and Y perfectly, with all data points lying on a line for which Y increases as X increases. A value of −1 implies that all data points lie on a line for which Y decreases as X increases. A value of 0 implies that there is no linear correlation between the variables.

Table 14. Correlation of quarterly growth data in the EU, Iceland, and selected countries

Based on the data in Table 13 on the previous two pages.
"Q" for yearly quarters (3-month periods).

Correlation for 1997Q2 - 2009Q3:	
Correlation EU-Euro Area[124]	0.99
Correlation EU-Iceland	0.11
Correlation Euro Area-Iceland	0.11
Correlation Euro Area-Germany	0.91
Correlation Euro Area-France	0.88
Correlation Euro Area-Finland	0.90
Correlation Euro Area-Netherlands	0.86
Correlation Iceland-Germany	0.10
Correlation Iceland-Finland	0.09
Correlation Iceland-France	0.09
Correlation Iceland-Netherlands	0.20
Correlation Finland-France	0.80
Correlation Germany-Netherlands	0.77
Correlation for 2000Q2-2009Q3 (Greece):[125]	
Correlation Euro Area-Greece	0.51
Correlation Iceland-Greece	0.12
Iceland before, during and after the 2008 crisis:	
Correlation 2002Q1 - 2007Q4:	
Correlation Euro Area-Iceland	0.04
Correlation 2004Q1 - 2009Q3:	
Correlation Euro Area-Iceland	0.24
Correlation 2008Q1 - 2009Q3:	
Correlation Euro Area-Iceland	0.05

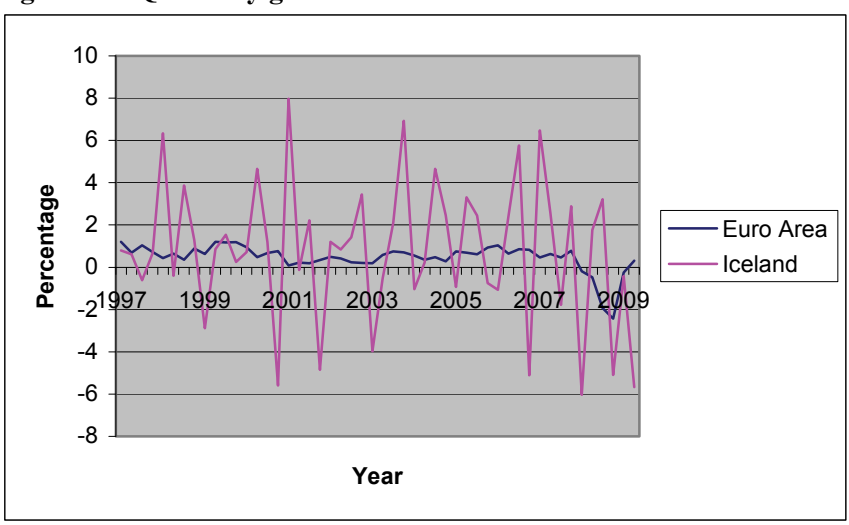
Table 14 (above) shows that when using quarterly data, the correlations in growth and contractions in the Euro-zone business cycle are very high, including between individual member states selected for

[124] "Euro-zone" and "Euro Area" are synonyms.
[125] Greece does not show quarterly data before 2000.

comparison, although somewhat less in Greece than in the other EMU members. It is also particularly noticeable that when Iceland is compared with the EU, Euro-zone, or with any of the selected EU members individually, the correlations remain low. Varying the selected periods for Iceland from 1997-2009 to e.g. 2002-2007 (pre-2008 crisis), 2004-2009, or 2008-2009 (during and after the 2008-crisis), results in a similar lack of correlation. Some would interpret these low correlations as an argument for Iceland to have a currency separate from the EU, and at the same time it supports an argument for the EU members shown in this data to have the same currency (possibly with a question about Greece, but Greece has on occasions been in the EU cooperation more for political reasons than for economic reasons). Others would emphasize that the business cycle is endogenous and would with time probably become less pronounced and more synchronized with the rest of Europe if Iceland were to join the EU; indeed, they might argue that one of the aims of Icelandic membership would be to produce such an outcome. More on this below.

The data presented in Table 13 (on pages 102-103) is supposed to be seasonally adjusted for cyclical fluctuations[126]. Putting this data into a graph, shown in Figure 10 below, nevertheless shows very high cyclical fluctuations in Iceland, which is not the case in the much larger Euro-zone. A possible explanation is that the Icelandic economy is less diversified than the Euro-zone and its member states.

Figure 10. Quarterly growth in the Euro Area and in Iceland

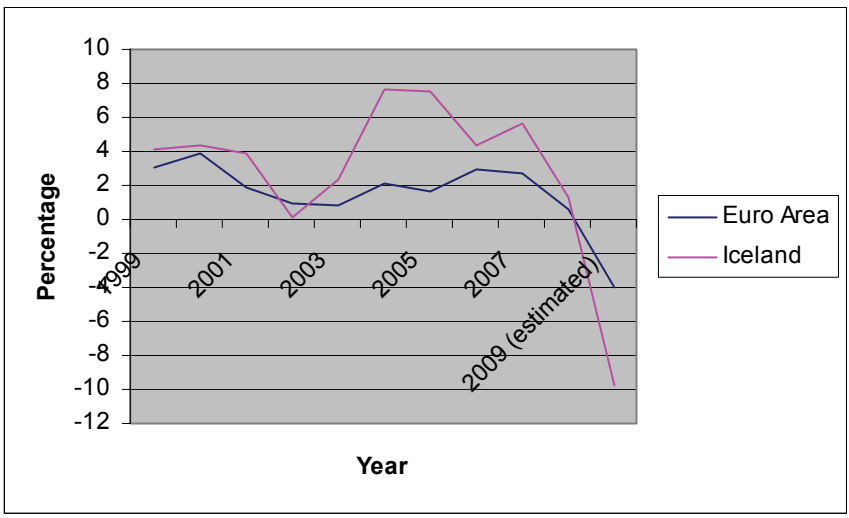


Source: OECD (2010)

[126] An example of cyclical fluctuations is seasonal fish catches.

European governments and central banks tend to base their fiscal and monetary policy interventions on economic data when quarterly information is available. Rarely do policy makers wait a whole year, as that would be too late. Nevertheless, if we compare yearly data rather than quarterly data on Icelandic growth with the Euro-zone growth, the pattern looks very different, as shown in Figure 11 below.

Figure 11. Yearly growth in the Euro Area and in Iceland



Source: Eurostat (2009 & 2010)

It may be hard to believe that Figures 10 and 11 (above and on the previous page) show in principle the same thing, i.e. comparing growth in the Euro-zone with growth in Iceland, - but they do. In Figure 10 the Icelandic economy appears to go up and down "like a needle in a sewing machine".[127] We shall therefore also study yearly data on growth, presented in Table 15 on next two pages, which shows a somewhat different correlation than when using the more detailed quarterly data.

[127] No doubt, many EU local economies show a similar tendency, e.g. ski resorts in winter and summer periods.

Table 15. Yearly growth data comparison 1980 - 2009 (% change) and correlation. (Correlation continued on next page)

	Euro-zone	EU-15 [128]	Iceland	Germany	France	Finland[129]	Nether-lands	United Kingdom
1980		1.5	5.7	1.4	1.7	5.4	2.2	-2.1
1981		0.2	4.3	0.5	0.9	1.3	-0.4	-1.3
1982		1	2.2	-0.4	2.4	3	-1.2	2.1
1983		1.8	-2.2	1.6	1.2	3	2	3.6
1984		2.5	4.1	2.8	1.5	3.1	3.5	2.7
1985		2.5	3.3	2.3	1.7	3.3	2.3	3.6
1986		2.8	6.3	2.3	2.5	2.6	3.3	4
1987		2.7	8.5	1.4	2.5	3.5	2	4.6
1988		4.2	-0.1	3.7	4.6	5.2	3.4	5
1989		3.7	0.3	3.9	4.2	5.1	4.4	2.3
1990		3	1.2	5.3	2.6	0.5	4.2	0.8
1991		1.9	-0.2	5.1	1	-6	2.4	-1.4
1992		1.1	-3.4	2.2	1.4	-3.5	1.7	0.1
1993		-0.4	1.3	-0.8	-0.9	-0.8	1.3	2.2
1994		2.8	3.6	2.7	2.2	3.6	3	4.3
1995		2.6	0.1	1.9	2.1	4	3.1	3.1
1996		1.7	4.8	1	1.1	3.6	3.4	2.9
1997		2.7	4.9	1.8	2.2	6.2	4.3	3.3
1998		3	6.3	2	3.5	5	3.9	3.6
1999		3	4.1	2	3.3	3.9	4.7	3.5
2000	3.9	3.9	4.3	3.2	3.9	5.3	3.9	3.9
2001	1.9	1.9	3.9	1.2	1.9	2.3	1.9	2.5
2002	0.9	1.2	0.1	0	1	1.8	0.1	2.1
2003	0.8	1.2	2.4	-0.2	1.1	2	0.3	2.8
2004	2.2	2.3	7.7	1.2	2.5	4.1	2.2	3
2005	1.7	1.8	7.5	0.8	1.9	2.9	2	2.2
2006	3	3	4.3	3	2.2	4.4	3.4	2.9
2007	2.7	2.7	5.6	2.5	2.3	4.9	3.6	2.6
2008	0.5	0.5	1.3	1.3	0.4	1.2	2	0.5
2009	-4.1	-4.3	-6.5	-4.9	-2.6	-7.8	-4	-4.9

Source: Statistics Iceland (2010) and Eurostat 2010.[130] (Correlation shown on next page).

[128] EU-15 represents the EU as it was before the 2004 and 2007 enlargements. Of the EU-15, Denmark, Sweden and the United Kingdom have not joined the Euro-zone.

[129] The data for Finland was slightly revised in early 2010, all the way back to 1980.

[130] There are minor differences in data between sources and occasionally data are slightly revised.

(Table 15 continued from previous page)

Correlation 1980-1994 (Pre EEA)		**Correlation 1995-2009 (Post EEA)**	
EU(15)-Iceland	0.06	EU(15)-Iceland	0.79
EU(15)-Germany	0.73	EU(15)-Germany	0.96
EU(15)-France	0.86	EU(15)-France	0.96
EU(15)-Finland	0.45	EU(15)-Finland	0.97
EU(15)-Netherlands	0.78	EU(15)-Netherlands	0.92
EU(15)-United Kingdom	0.53	EU(15)-United Kingdom	0.97
Germany-France	0.49	Germany-France	0.89
Finland-Netherlands	0.18	Finland-Netherlands	0.93
Correlation 1980-1999 (Pre EMU)		**Correlation 1990-1999 (Pre EMU)**	
EU(15)-Iceland	0.11	EU(15)-Iceland	0.45
EU(15)-Germany	0.68	EU(15)-Germany	0.55
EU(15)-France	0.86	EU(15)-France	0.93
EU(15)-Finland	0.49	EU(15)-Finland	0.54
EU(15)-Netherlands	0.76	EU(15)-Netherlands	0.86
EU(15)-United Kingdom	0.55	EU(15)-United Kingdom	0.35
Germany-France	0.46	Germany-France	0.40
Finland-Netherlands	0.33	Finland-Netherlands	0.69
Correlation 2000-2009 (Post EMU)			
Eurozone-EU(15)	1.00 [131]		
Eurozone-Iceland	0.85		
Eurozone-Germany	0.97		
Eurozone-France	0.98		
Eurozone-Finland	0.98		
Eurozone-Netherlands	0.96		
Eurozone-United Kingdom	0.95		
EU(15)-Iceland	0.86		
EU(15)-Germany	0.96		
EU(15)-France	0.98		
EU(15)-Finland	0.99		
EU(15)-Netherlands	0.94		
EU(15)-United Kingdom	0.97		
Germany-France	0.92		
Finland-Netherlands	0.95		

[131] 0.9973

The data in Table 15 (on the previous two pages) gives rise to several observations. Before joining the EEA, the Icelandic annual growth rate was almost completely out of step with the EU with a correlation of 0.06. After joining the EEA, Iceland shows a correlation of 0.79 compared with the EU, which is a drastic increase. At the same time all other pairs compared also showed an increase in correlation, but the full EU members have nevertheless a higher correlation than Iceland. The correlation between EMU members is extremely high, and perhaps most surprisingly, Iceland has a remarkably high correlation to the Euro-zone with 0.85. It is not surprising to see that the Euro-zone and the EU-15 are almost identical, most members being the same. However, it is surprising to see that the United Kingdom, which does not participate in the EMU, follows the same high correlation pattern as the EMU members do. Figures 10 and 11 on pages 105 and 106 show quarterly and annual cyclical output fluctuations in Iceland and in the Euro-zone. The yearly data presented in Table 15 (on the previous two pages) does not take quarterly fluctuations into account and the result is a much higher annual data correlation between Iceland and the EU than in the quarterly data shown in Tables 13 and 14 (on pages 102-104).

The fact that growth rate correlations have gone drastically up between EMU members, compared to the pre-EMU period, would be a sign that the business cycle is endogenous, i.e. that the currency union supports itself by harmonising business cycles. However, considering that the same applies to Iceland and the United Kingdom, both of which do not participate in the EMU, shows that this statement is not carved in stone. What we can say, however, is that because Iceland (and the United Kingdom) have had such harmonised growth periods compared with the Euro-zone during the last decade, an argument that the Icelandic (or British) business cycle is out of harmony with the Euro-zone does not preclude EMU membership.

5 – 4 Effects of the Economic and Monetary Union on the Icelandic Economy

Gros and Thygesen (1992), De Grauwe (1994, 2000, 2005) and several others analyse the effects of monetary integration. They see benefits from the elimination of exchange rate risk, transaction costs, and price discrimination, although the actual transition to change the currency incurs expenses. How would this influence trade in Iceland? Before going into the "Costs of Non-Europe", the Optimum Currency Area theory, mentioned in part 5-1, merits some further attention. An Optimum Currency Area is an area neither so small and open that it would be better off pegging its currency to a neighbour, nor so large that it would be better off splitting into sub-regions with different currencies. The size of an optimum currency area could be anything from a small village, country, continent, or the whole world. The rationale behind a currency area is that if there is a shift in demand or an economic shock, areas with different currencies would be free to use their own economic tools (monetary and exchange rate policy) to adjust to the shock. In a case where a currency is pegged to a base (superpower) currency (e.g. pegged to the US Dollar or to the Euro), the currency could be revalued or devalued, and in the case of a floating currency, interest rates could be manipulated to achieve the same. However, in the case of a currency area, in order to alleviate the economic effects of a shift in demand or an economic shock, the whole burden of adjustment would fall on fiscal policy and there would have to be an adjustment in wages or movement of labour. An adjustment of wages downward in nominal terms is difficult to achieve due to the power of labour unions. Reducing wages through seignorage[132] by printing money and thereby creating inflation, which reduces the real purchasing power of wages, is not an option in a currency union. Equilibrium could also be achieved through mobility of labour, as is the case within the EEA (and the EU), but mobility of labour is much easier to achieve within a country than between countries, which is explained by administrative burden, language, and cultural differences international migrants often face. As a critique of the Optimum Currency Area theory, it is often argued that demand shocks are often sector specific rather than country specific. In such a case a large country with a diversified economy would not solve the problem by the use of monetary or fiscal policy alone. However, as touched upon in part 5-1, in a small country such as Iceland,

[132] Government revenue derived from their exclusive right to issue new money.

where e.g. fisheries and fisheries exports are a significant part of the economy (see Table 3 on page 44), a sector specific shock could easily become a country specific shock. In that case, freedom to adjust the currency can be helpful. Even so, with freedom to adjust monetary and fiscal policies, a small open economy like Iceland is vulnerable to exchange rate risk because a floating currency can be difficult to balance by the tools available to the government. Iceland imports many consumer goods and a drastic fall in the value of the Icelandic Krona pushes prices up and creates domestic inflationary pressure.

The Optimum Currency Area theory indicates that the costs of a common currency could be substantial unless the following conditions apply (based on Bain 2006 and Tavlas 1993):

(a) Members have open economies;
(b) Member have a high mobility of factors between them and/or wages and prices are fully flexible;
(c) Members have similar short-term inflation/output trade-offs;
(d) Members have similar views regarding the desirable position of the short-term inflation/output trade-off;
(e) Member have similar rates of growth;
(f) Members have similar legal and financial systems;
(g) Members have similar fiscal systems;
(h) Members have diversified economies;
(i) Members have limited need for real exchange rate variability;
(j) Members have a political will to integrate.

Now the question arises how these 10 points apply to Iceland when compared with the EU and the Euro-zone.[133] Concerning point (a), under the current EFTA-EEA arrangement the Icelandic economy is open to all Euro-zone members, except for agriculture, fisheries and the administrative barrier of not participating in the European Customs Union. If Iceland joins the EU, its economy will be as open as it can be, vis-à-vis other EU members. Concerning point (b), both the EEA and the EU provide for free mobility of workers and capital. This does not differ in Iceland from other EEA and EU members and will not change by full EU membership. Prices can go up and down, but wages in Iceland and the EU are relatively rigid in the sense that they can easily increase but are almost impossible to decrease in nominal terms. Concerning points (c) and (d), both the European Central Bank and the Icelandic Central Bank

[133] Here we only compare Iceland to the Euro-zone, not Euro-zone members to each other. The Euro-zone is a political fact and we wish to know if it might be beneficial for Iceland to join it.

have it as a goal to keep inflation low. During the last few years Iceland has failed to meet this goal, but it is still the goal. If Iceland cannot keep its inflation under control, EMU membership is excluded as discussed in part 5-2. Concerning point (e), the Icelandic growth rate and its correlation to the EU is shown in part 5-3. Compared with the EU average, growth in Iceland was relatively fast between 2000-2007, but in 2008 and 2009 Iceland had a negative growth exceeding that of the Euro-zone (figure 11 on page 106). However, this is likely to be a temporary situation. Part 5-3 indicates that growth rate is better harmonised both in the EU and in the currency union than in Iceland and this criterion seems more endogenous than exogenous. Concerning points (f) and (g), under the EEA agreement Iceland has adopted most EU rules on commerce; taxation systems are similar (VAT, income tax, etc.), although there is no official EU or EEA harmonisation of taxes; and the financial systems are comparable. Concerning point (h), Iceland has a very small economy compared with most EU members. Although its structure is similar to most of the EU, where approximately 2/3 is produced in the service sector, diversity is limited as shown in chapter 2, part 4 on Iceland. This means that a sector specific shock in the Euro-zone could be a country economic shock in Iceland. Concerning point (i), a country economic shock as pointed out under (h) above, is easier to cope with if the foreign exchange rate can be adjusted to influence prices on imports and exports. In the past, devaluations were common in Iceland, however revaluations of the Icelandic Krona vis-à-vis foreign currencies did not take place. If adjusting the real exchange rate is only used into one direction, - downwards, - it only creates inflation, which until two decades ago was endemic in Iceland. Concerning point (j), the EU has the monetary union as a political goal and has shown that it will back it up with all necessary means. After the economic collapse in Iceland in 2008, the Icelandic political will to consider abandoning the Krona as a rather unstable national currency has risen sharply. We can therefore conclude that although Iceland is much smaller than the Euro-zone, there are no fundamental economic differences, except the size and diversification of the economy. The common European currency is a part of the political goal of creating a unified Europe. As a waypoint, it may have costs involved while the Union is made up of many independent states, rather than if it were one state. If Iceland was considering a currency union with e.g. Brazil or India or China or the United States, the matter might look somewhat different.

An advantage of the Euro as a single currency that must be emphasized is the disappearance of the exchange rate risk, which in

Iceland can be significant. Many Icelandic individuals and corporations prefer to borrow money domestically in Icelandic Kronas at interest rates up to the double of the Euro-zone, rather than facing the risk of currency volatility. Although there is a free flow of capital within the EEA, the advantages of a single currency are not there. Adopting the Euro would substantially reduce the hitherto popular Icelandic practice of borrowing in low-yield foreign currencies. Corporations and individuals would save money on the single currency through the lower interest rates, but domestic Icelandic lenders (banks) would lose out as unnecessary middlemen. The total amount paid in interest on borrowed funds by Icelandic corporations and individuals is difficult to estimate because free flow of capital allowed under the EEA has pushed several enterprises and private individuals to borrow at lower interest rates in the Euro-zone, despite the currency volatility. Nevertheless, we assume that substantial amounts could be saved on interest payments. These savings would for a large part, however, be compensated for by domestic lenders losses, i.e. Icelandic savers, and would possibly have a minimal net welfare effect, except there would be more people willing to start a business on loans, which stimulates economic activity. Lower interest rates and the absence of currency volatility will as a general rule lead to increased demand for loans. This in turn is likely to stimulate over borrowing, which often leads to stock market and housing bubbles. To a certain extent, this is what happened in the 2008 Icelandic banking crisis, where the main Icelandic banks financed themselves through low interest rate foreign loans, leading to an unusually high supply of cheap capital, which eventually was spent on badly considered business deals, consumption, and a stock market and real estate bubble.[134] Apart from the above-mentioned issues, an undisputed advantage of a single currency is, as mentioned by De Grauwe, that the deadweight loss to the economy caused by banking personnel working on foreign exchange transactions would disappear, and these former bank employees could then take up jobs more beneficial to society.

Along with fisheries and agricultural policies, one of the main changes we expect if Iceland abandoned the EFTA-EEA arrangement and became a EU member would be the single currency, - the Euro. As noted

[134] As of this writing, large sums of money are unaccounted for. The owners and leading figures in the main banks used the banks to give loans to a network of corporations in their own private names, many of which are registered in offshore tax shelters. The Icelandic government has had little will and even less means to deal with the scale of the alleged frauds. One explanation is that political parties need financial sponsors and many politicians are too close for comfort.

before, it is a widely held belief that a common currency increases trade, and that increased trade increases net welfare by producing goods where they are cheapest to produce. Furthermore, combined with the total abolition of customs formalities, import-export to the EU would likely grow, although possibly at the expense of domestic trade and trade with non-EU members. One currency and total abolition of import formalities would force importers to lower their profits to the benefit of the customer who would find it simpler to buy goods wherever he/she wants within the European Union.

We should recall that Rose (2000) finds that using the same currency may increase trade by perhaps up to three times. Several studies criticized Rose on econometric grounds (see e.g. overview in part 5-1 in this study and De Grauwe 2005, p. 28).[135] Although the "Rose effect" on trade may be biased upwards, the trade effect of a Monetary Union in Europe may be in the order of 20% to 40% increase (De Grauwe 2005), which is quite significant. This increased trade contributes to a higher correlation of economic cycles amongst the trading partners, which in turn reduces the importance of having own national currency. Most importantly, trade increases net welfare, although it can be disputed how much.

Despite the uncertainties, we will attempt to give estimation of the possible long-term effect of EMU in Iceland. At the turn of the 21st century the total value of Icelandic external trade as a part of GDP ((imports + exports) / GDP) was around 80%, where value of goods represented about 50% of GDP. During the last 40 years, this figure has remained remarkably stable, with fluctuations of less than 20 percentage points up and down.[136] Icelandic trade with EEA countries, including the EU, is about 70% of all imports and exports. Not all of the EEA has (yet) adopted the Euro and Icelandic external trade with the current Euro-zone represents approximately 40% of all Icelandic external trade. Being an

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[135] E.g. Persson (2001) and Nitsch (2001). Others have focused on the trade effects of monetary integration in Europe, e.g. Bun and Klaasen (2002), Micco et. al. (2003) and De Nardis and Vicarelli (2003).

[136] Breedon and Petursson (2004). Data from Statistics Iceland for the years 2000-2007 show that the balance of Icelandic external trade in goods as a part of GDP ((exports + imports) / GDP) remains approximately 50% with a yearly variation of only 5 percentage points. Preliminary data for 2008 indicate a similar percentage, and years with lower GDP are directly reflected in lower external trade. Statistics Iceland is for the time being unable to provide us with new data on external trade in services. However, we have no reason to believe that there is a substantial change since Breedon and Petursson (2004) published their findings.

island without land-borders with other European countries, it is doubtful that a common currency would increase trade as much as between neighbouring countries with a completely open land border, as is the case for most of the continental EU. Nevertheless, based on the various estimations on the effects of currency unions, combined with abolition of customs formalities, we could assume that in a couple of decades time Icelandic external trade with the EU would be 25% higher as a result of the EMU.

Based on an estimated 25% higher trade with the EU, we can use Frankel and Romer (1999) and Frankel and Rose (2000 and 2002) to estimate the benefits of this increase in trade. In this calculation we will assume that all of the EU (EEA) has the same currency.

(1) Current external trade as part of GDP = 80% of GDP.
(2) Current non-EU external trade is 80% x 30% = 24 % of GDP, and is expected to remain unchanged.
(3) Current trade with the EU/EEA is 80% x 70% = 56% of GDP.
(4) New intra EMU trade will be 56% x 125% = 70% of GDP.
(5) Total external trade after EMU will be 70% + 24% = 94%.
(6) Increase in trade over GDP will be 94% - 80% = 14 percentage points.

Now we can add the findings of Frankel and Romer (1999) who estimated that one percentage point increase in the ratio of trade to GDP raises income per capita by between 0.5% and 2%, and the findings of Frankel and Rose (2000 and 2002) estimating that 1% increase in trade between countries in a monetary union increases income per capita by 0.33% over a 20 year period. Rose has informed us that income per capita should be understood as GDP per capita[137]. Using the lower estimate of Frankel and Rose (2000 and 2002) shows:

(7a) 14 percentage points x 0.33% increase per point = 4.6% increase in income per capita;

and using the higher estimate of Frankel and Romer (1999) shows:

(7b) 14 percentage points x 2% increase per point = 28% increase in income per capita.

[137] In this context it is interesting to note that about half of the Icelandic GDP is from wages.

Those are significant positive effects, but from 4.6% up to 28% is a big difference. This theory must be put into context of reality. The Euro notes came out in January 2002 and the "Rose effect" supposedly takes 20 years. The full "Rose effect" in the current Euro-zone is not yet there, but despite the common currency's many benefits, the higher estimate is not likely to be realistic. Estimates vary greatly and the actual final figure could nevertheless be either lower or higher. Educated guess or "guesstimate" is perhaps a better word than estimation. We have no doubt that drastic economic improvements will continue to happen in the new EU member states in Eastern Europe and the Mediterranean, but considering that Iceland's GDP is already over the EU average, significant increases might be more difficult to achieve. No doubt that the "Rose effect" is there, the question is just how strong it is. We shall therefore go with the lower estimate and conclude that approximately 5% higher GDP per capita is a likely long-term result of adopting the Euro in Iceland. We should also emphasise that the Euro-zone does not yet cover all of Europe. In the unlikely event that the Euro-zone would not expand further, the current EMU effects would be only half of what is shown above, i.e. 2.5%.

To support our positive estimation, Breedon and Petursson (2004) find that if Iceland joined the EU and EMU, trade with other EMU countries would increase by 60%, that the trade over GDP ratio could rise by 12 percentage points, and this would result in that GDP per capita would in the long-run be boosted by 4%. They point out that joining the EMU would cause roughly half of those effects and the other half would be from joining the EU. Breedon and Petursson (2004) also point out that if Denmark, Sweden, and the United Kingdom joined the EMU, the positive effects would be even greater, which is in fact already included in our assumption above. We would also like to draw attention to that Einarsson and Sturluson (2008) find that by adopting the Euro might increase Icelandic GDP by 6 to 8%[138] and purchasing power by 24%.

[138] Einarsson and Sturluson (2008), page 134.

5 – 5 Concluding Remarks on the Economic and Monetary Union

The EMU is still in its infancy and estimations are not easy. There are both advantages and disadvantages of a single currency. For better or worse, member states' national governments cannot single-handedly change their monetary policy. They cannot print money at will nor can they devalue the currency as they see fit in order to suit local economic demands. The single European currency has become a large European economic base, rather than a local or national political-economic instrument. The EMU is a building block of the European Union, sometimes referred to as "Euroland". As such, it is not only economically, but also politically motivated. The studies surveyed indicate that a single currency increases trade which increases net welfare. The exchange rate risk is gone, price comparison is easier, and banking expenses are reduced. Consumers and producers will find it simpler to buy goods were they are cheapest. Most economists tend to agree that the EMU has positive long-term effects and that the advantages outweigh the disadvantages. The discussion is increasingly focussed on how big the advantages are, but not a debate on if a single European currency is good or bad. We find that if Iceland joined the EMU, in the long term it will lead to a GDP that would be about 5% higher than if Iceland stays outside the EMU[139]. Furthermore, individuals' benefits could be even greater. Other studies are equally optimistic. Nevertheless, the actual process of changing a currency has some costs and in the first few years after a change, it is not unheard of that the general public wrongly blames the new currency for all economic ailments[140].

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[139] The Euro-zone does not yet cover all of Europe. In the unlikely event that the Euro-zone would not expand further, the current EMU effects would be half of this, i.e. 2.5%.

[140] E.g. many shops will round the new prices now marked in Euros up to the nearest Euro, rather than using Eurocents, which in reality is a price rise.

6. Agricultural Policy

This chapter deals with some of the problems facing agriculture in industrialised countries and compares agricultural policy in the European Union (EU) with agricultural policy in Iceland.

6 – 1 Global Considerations in Agriculture

The first humans were collectors and hunters. Thousands of years ago it turned out that collecting and hunting did not suffice to ensure a stable food supply and agriculture (farming) was born as a profession. Agriculture provides food and fibres, and food production is currently the world's most important production because food is the only thing people (and animals) cannot live without, along with drinkable water and air to breathe. Management in agriculture is as old as agriculture itself. The prehistoric farmers faced decisions on what to produce and in which quantities. Without doubt they also had to decide on what to exchange with their neighbour and what to ask for in return. The family, village or tribal chief had to delegate work. Although modern industrialisation has introduced labour saving machinery and globalisation has involved states and groups of states in agricultural policy decisions, the fundamentals are still the same.

Agriculture has been criticized in many industrialised countries for being too expensive, where farmers have received large financial transfers from consumers and taxpayers. The EU and Iceland are no exception. Many industrialised countries have protected their agriculture from cheaper foreign imports by trade barriers. Furthermore, there has also been criticism of overproduction, which is often "dumped" on the world markets by using exports subsidies. In order to give a better understanding of why agricultural policies in many industrialised countries have developed as they have, with subsidies and high food prices, some words should be said on principles in agricultural economics.

Edgar Thomas wrote his book "An introduction to Agricultural Economics" in the late 1940s. Although there have been advances in economics and farming technology since then, the basic theoretical principles Thomas (1949) presents are still valid. In the first chapter he writes: "Farming is variously described as an art, as a science, as a business, as an industry, and as a way of life". Thomas continues by specifying that agricultural economics are concerned with farming as a

business and farming as an industry. He describes the factors of agricultural production; land, which is fixed by nature; capital, which can be added to if needed; and labour. Thomas does not discuss technology as a separate factor, but as a part of labour because it is labour saving. Thomas describes agriculture under a free market system. At the time only the Soviet Union had a communist system and the decade before Thomas wrote his book Stalin's collectivisation had failed badly, producing famine in parts of that country. According to Thomas, under the free competition system, the prices will be a function of supply and demand, producing equilibrium in food supply. But Thomas points out that there are differences of opinion about the efficiency with which the freely working price system works. Half a century later there are still different opinions on to what extent agriculture should be regulated or left to free market forces.

The territorial or geographical division of labour is the real reason why countries trade with each other. Thomas (1949) refers to the theory of comparative cost and comparative advantage, which states that it is in the interest of the world that countries should concentrate on the production of those goods and services in which they possess the greatest degree of comparative advantage. Applied to any particular country, this means that it is in its own interest to produce those items it can make more cheaply than buy from others, and to purchase from other countries those items it can buy more cheaply than make at home. We should point out that to a large extent agricultural policy makers in both Iceland and Europe appear to ignore the theory of comparative cost and comparative advantage, simply because there are other important factors in formulating agricultural policies than just economics.

In the introduction to "Agricultural Economics", with its large collection of contributing articles from other authors, Peters (1995) poses the question on how agricultural economics are approached. According to Peters, at many universities, the economics of agriculture are studied within the department of agriculture, rather than at the department of economics. This leads to that students tend to focus heavily on scientific and technical aspects of plant and animal husbandry, while receiving less knowledge on economics and how to apply economic theory to agriculture. Many of these students, who are principally agriculturists, become leaders in farming, agri-business and agro-politics and need to understand the broader economic context in which farming operates. Peters also mentions that agricultural economics are often looked upon as sector economics just like labour, transport, health, environmental and regional economics. Although Peters doesn't spend many words on it, he

also mentions the parallels between price fixing policies in the EU to similar discussions in former communist countries. In analysing European agricultural policies, we believe that it is important to bear in mind that the price fixing is a measure that distinguishes agricultural management policies from completely free market production.

Continuing to explain theory behind agriculture, Penson et al. (1996) find that by stating that agricultural economics is applying economic principles to agriculture is too narrow a definition. Wider economic, social and environmental issues must also be considered. It is not only the farming itself, but also the wider range of food and fibre[141] related activity that counts. Penson et al. mention the basics of agricultural economics: the natural resources (land), the human resources (labour) and manufactured resources (capital / machines), and discuss the basics of micro and macro level agricultural economics. They discuss the rationale behind government intervention: support and protect an infant industry, curb market powers of imperfect competitors when necessary to promote social good, provide food security, provide for consumer health and safety, and provide for environmental quality. They also discuss the international issues and contra-indications for government intervention: export subsidies, import tariffs, quotas on farmers, adequacy of food supply, and the movement towards free trade. Although not only applicable to agriculture and food and fibre supply, Penson et al. highlight the macroeconomic policy options: laissez-faire versus a Keynesian intervention. They also say that protectionism in agriculture stems from food security needs and draw attention to that some agricultural protection laws passed during the Great Depression in the 1930s are still in force. What Penson et al. note are key factors in explaining why agricultural policies tend to be more managed and agricultural production more controlled than most other economic factors in the society: there are indeed other factors in food and agricultural production than just economics.

Mounier (1992) shows how abstract agricultural economic theory has developed through the years. He describes four theoretical models used in studying agricultural economics, starting with the physiocratic model from the mid 1700s, which appeared following the mercantilist ideas, then the classical model, the Keynesian model and finally the neo-classical model. To summarise Mounier, the physiocrats find that riches of a country stem from production, such as agriculture, but not from trade

[141] Fibres means materials such as cotton and wool to make clothes, blankets, and carpets.

and accumulation of precious metals. In the classical model, agricultural output (production capacity) depends on the number of agricultural workers utilized and the average productivity of the agricultural worker. In the Keynesian model the agricultural output depends on the capital employed in agriculture and the average efficiency of the capital employed in agriculture. In the neo-classical model the total agricultural output depends on the relation between aggregate input and aggregate output and a function of the production factors, i.e. capital and labour, where the function can change pending the balance of the factors. Mounier finds that modern econometrics are not very suitable to measure agricultural production and the quantitative approach, using volume and productivity, cannot be measured independently without considering factors such as quality.

We believe that a model like the one presented by Albagli (2001) is perhaps better than the models presented by Mounier (1992). Albagli's model shows agricultural production, with inputs being work, climate, nature, the ground, capital and technology, and the output being the production, with an annual variation. We find that what differs between pure economic models, such as those presented by Mounier and the one presented by Albagli, are natural factors, climate and soil. We can point out that colder countries often use the climate to "justify" large-scale agricultural support, and by noting these factors, Albagli touches on some of the economic realities of agricultural production. Icelandic agriculture is more subsidized than the EU, and EU is more subsidized than most southern Less Developed Countries (LDC). Even within the EU Common Agricultural Policy (CAP), member countries with harsher and colder climate enjoy special provisions for their agriculture. In the colder and harsher regions, the economic case against protectionism is even more compelling, yet often these countries have one of the highest economic transfers to the food production sector, rather than simply moving over to cheaper imported food.[142] The different economic models used to study agriculture, such as those described by Mounier (1992) and Albagli (2001), may be very helpful from a pure economic viewpoint, but we find that the decision on agricultural policies is much more a political decision than a question of economics. Agricultural policy makers know the economic facts, but often decide not to adopt the cheapest solution.

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[142] In this case it is interesting to compare Europe to North America. Canada has subsidized agriculture at a higher rate than the United States. Today the subsidies have been reduced (in relative terms) and there are no indications that Canadians as a nation are worse off.

Agriculture is more than economics of food production. As food production, it is a public utility, but it is also a social and rural policy. OECD (Agriculture and the Environment in the Transition to a Market Economy, 1994), points out that in most countries agricultural sectors have for a long time been strongly influenced by official policies, which include the achievement of adequate, safe and stable food supply, reasonable prices to consumers, satisfactory income to farmers, balanced regional development, thriving rural areas, and agricultural practices that are beneficial to the environment. OECD (Multifonctionnalité, Agriculture et alimentation, 2001) mentions the concept agreed on by ministers of agriculture in 1998, "that although the primary function of agriculture is the production of food and fibre, agriculture is also important in shaping the countryside, bringing environmental advantages such as conserving the soil, manage renewable natural resources and maintain biodiversity, and to contribute to viable social-economic life in many rural areas". With these words it is clear what OECD agricultural ministers agreed upon, and this is a political justification to continue agriculture in industrialised countries, despite it being more expensive than producing food in LDCs.[143] We fully agree that agriculture's primary function is to supply food and fibres, but we cannot completely agree with the opinion that agriculture brings environmental advantages. Although this is sometimes the case, where farmers cultivate the land, in some other cases agriculture has led to environmental damage, either unknowingly, or because of overexploitation of the land, not to mention environmental changes to the flora and fauna. Examples are the use of pesticides in industrialised countries where insects are an essential part of the nutrition for many small wild animals, and removing the rain forests in tropical countries to make space for cattle farming.[144]

Agricultural economics in a restricted sense are concerned about the business problems of the farm as a unit of industry, and in a social-economic sense it also deals with the relation of agricultural industry to other industries in the national and world economy, such as food processing factories, distribution and retailers (Thomas, 1949). Under the economic system of free competition, supply and demand is supposed to regulate production and prices automatically. If the supply is too little of one product the prices go up and more farmers are attracted to producing it, and vice versa, too large a supply, the prices drop, farmers' incomes

[143] OECD consumers and taxpayers must pay this extra price.

[144] With 6 billion (6 thousand millions) humans on the planet, and still growing, at one point human activity and pollution will reach a breaking point.

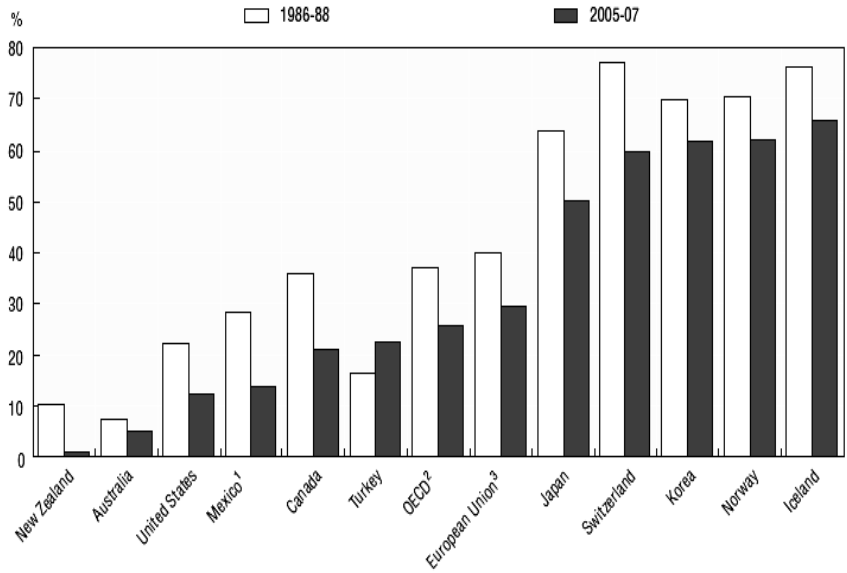
drop, and farmers are pushed into producing other products in search of better profits. But the OECD has pointed out, (Gestion des risques en matière de revenue dans le secteur agricole, 2000), that the lower the protection is, the higher will be the risk for the farmers. Such risk can lead to market failures and can be used to justify intervention, as was the case during the Great Depression. As a broad generalisation, policy objectives in the European OECD countries have tended to be addressed by market intervention and border measures, in particular import levies and export subsidies, supplemented by supply controls on output and, more recently, with direct payments, sometimes linked to land set aside and environmental requirements. The OECD has also highlighted the growing set of issues in international agricultural trade, such as different environmental standards between countries, giving the country with lower standards a competitive advantage. Trade barriers can also stem from differences in labelling, food safety standards and production methods, such as the use of growth hormones. We are of the opinion that agriculture, as food production, should be looked at as a public utility, similar to gas, water, electricity, and banking services, simply because those are services modern society cannot function without. Indeed, most public utility sectors are heavily regulated, if not state controlled.

The OECD has utilized measures such as Producer Support Estimate (PSE)[145], Consumer Support Estimate (CSE)[146] and Total Support Estimate (TSE)[147] to measure the amount of support or subsidy to the agricultural sector. In brief, this is the cost of transfers to the agricultural sector born by consumers' and taxpayers' budgets. The detailed definitions of PSE, CSE and TSE are shown in Annex 2 on pages 250-251. As an example, the total support to agriculture in the OECD countries amounted to approximately USD 300 billion[148] in the year 2000, or close to one-third of the total agricultural production. The variation is big, however, with New Zealand's PSE of 1-3% and Iceland, Norway and Switzerland with a PSE of 60-70%, the EU being at 30-40%. Adding to the PSE and CSE other transfers from agricultural policies in OECD countries, total transfers in the year 2000 were estimated at close to 1.3% of the OECD GDP.[149] This protectionism is coming under increased

[145] Some users of the term prefer to use the word "Subsidy Equivalent" instead of "Support Estimate". Since 1998 the OECD generally uses "Support Estimate". Annex 2 on pages 250-251 shows the definitions.
[146] Idem.
[147] Idem.
[148] Billion meaning thousand millions (1 000 000 000).
[149] Source : OECD.

scrutiny because it distorts international trade in agricultural products and supports agriculture at the expense of other national production. Figure 12, below, shows agricultural support (Producer Support Estimate, PSE[150]) as a percentage of value of gross farm receipts in selected OECD countries and Table 16 on pages 126-127 shows Total Agricultural Support Estimate (TSE[151]) in the OECD in 1995 and 2005.

Figure 12. Agricultural support (PSE)[152] as a percentage of value of gross farm receipts in selected OECD countries.



Note: Countries are ranked according to 2005-07 levels.

1. For Mexico, 1986-88 is replaced by 1991-93.
2. Austria, Finland and Sweden are included in the OECD total for all years and in the EU from 1995. The Czech Republic, Hungary, Poland and the Slovak Republic are included in the OECD total for all years and in the EU from 2004. The OECD total does not include the non-OECD EU member states.
3. EU12 for 1986-94 including ex-GDR from 1990; EU15 for 1995-2003; EU25 for 2004-06 and EU27 from 2007.

Source: OECD, PSE/CSE *database* 2008.

[150] Definition in Annex 2 on pages 250-251.
[151] Idem.
[152] Producer Support Estimate (definition in Annex 2 on pages 250-251).

Table 16. Total Agricultural Support Estimate in the OECD in 1995 and 2005, in millions. (Table continued on next page).

		1995	2005
Australia	USD	1 518	1 961
	EUR	1 161	1 578
	Percentage of GDP	0.4	0.3
Canada	USD	5 704	9 055
	EUR	4 363	7 286
	Percentage of GDP	1.0	0.8
European Union	USD	139 649	150 558
	EUR	106 825	121 142
	Percentage of GDP	1.6	1.1
Iceland	USD	160	277
	EUR	123	223
	Percentage of GDP	2.3	1.7
Japan	USD	97 613	54 098
	EUR	74 670	43 528
	Percentage of GDP	1.9	1.2
Korea	USD	28 562	26 786
	EUR	21 848	21 553
	Percentage of GDP	5.5	3.4
Mexico	USD	- 47	5 963
	EUR	- 36	4 798
	Percentage of GDP	0.0	0.8
New Zealand	USD	192	302
	EUR	147	243
	Percentage of GDP	0.3	0.3
Norway	USD	3 145	3 301
	EUR	2 406	2 656
	Percentage of GDP	2.1	1.1

Table continued on next page

Table continued from previous page			
Switzerland	USD	7 436	6 102
	EUR	5 688	4 910
	Percentage of GDP	2.4	1.6
Turkey	USD	6 214	14 338
	EUR	4 753	11 537
	Percentage of GDP	3.7	3.9
United States	USD	67 930	105 459
	EUR	51 963	84 854
	Percentage of GDP	0.9	0.8
OECD	USD	362 900	375 560
	EUR	277 602	302 183
	Percentage of GDP	1.47	1.05

Source: OECD 2008

Figure 12 on page 125, and Table 16 (above and on the previous page) show that as a general rule agricultural support in OECD countries has declined over the last 10 years. Nevertheless, these amounts are considerable bearing in mind that agriculture in most OECD countries is only a very small part of the GDP. Iceland shows up with PSE and TSE well over both the EU and the OECD average.

It is a bit of a paradox that many industrialised countries restrict farm exports from many less developed countries and at the same time have ongoing aid programs to help the same countries. If industrialised countries stop their subsidies, both directly to farmers as well as for export, and let down their import duties, food in industrialised countries would be cheaper, but at the risk of being more reliant on imports. The explanations for not wanting cheaper food are simple. Politically, industrialised countries do not like to rely on having critical imports controlled by outsiders. Past examples show that this can be a serious risk, such as the oil from OPEC members, which was cut off for coercion purposes in 1973, and the gas from Russia, which was cut off during the frosts in January 2009 because of Moscow's dispute with Kiev. Relying on food imports is even less appealing than being dependant on foreign energy. In our opinion, from an industrialised country's viewpoint, if savings in food prices would have to be matched by an increase in national military-defence budgets to protect real or perceived vital food supplies, the economic benefit would be doubtful. This may be compared

to the technical, political, military, and economic effort the world spends on assuring and protecting oil supplies. The world's military and defence spending is a huge deadweight loss to the world economy, with costs close to 2-3% of GDP, which in most cases is more than spent on agricultural protection.

According to the FAO study, European Agriculture, Policy Issues and Options to 2000, (L'Agriculture Européenne: Enjeux et options a l'horizon 2000; published 1991, directed by Nikos Alexandratos), it is pointed out that both in Western Europe and in North America agricultural support policies have led to overproduction, imbalances on the markets, and commercial conflicts. According to FAO[153], agriculture's share in GDP in both Europe and North America is inferior to the manpower it employs, without an exception. In some cases the difference is a few percent, such as in Belgium and Luxembourg, where the farmer (agricultural worker) produced 80% of the average working capita, and in some cases, such as in Portugal and Spain, the average farmer (agricultural worker) produced only 33-35% of the average working capita, with Iceland being at 76-77%.[154] We find that these figures are important in showing that it should be possible to either increase labour efficiency in agriculture, or to employ some agricultural workers in other professions were their production share of GDP would be higher.

From an economic perspective, Winters (1995) points out that within OECD countries subsidized agriculture competes with non-subsidized industries for both capital and manpower. If agriculture is stimulated when there is full or almost full employment, other sectors contract. Agriculture may also attract proportionally more capital, at the expense of other production. He states that OECD countries' agricultural support increases OECD food prices, wastes resources by over-expanding agricultural output in high-cost areas and curtails it in low-cost ones, diverts resources from industry and services, reduces competitiveness in manufacture, discourages LDCs' agriculture by reducing world prices, and makes LDCs more volatile. He also points out the reasons and consequences of agricultural support, notably the aggregate economic welfare and welfare costs, distribution of income benefiting farmers and

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[153] Tables 2.1 and 11.1 in L'Agriculture européenne: Enjeux et options a l'horizon 2000.

[154] FAO figures. However, Tables 23 and 24 on pages 165 and 166 in our study indicate that an Icelandic agricultural worker produced 63% of the average worker in 2005, 64% in 2000, 53% in 1990, and 65% in 1980.

landowners, national security, and that intervention leads to deadweight losses.

There are wide differences in the estimations on how big total losses from agricultural support are. Estimates for the same areas (EU and/or USA) vary from around zero and up to billions of Euros (Dollars) per year. Although there is a general welfare loss, landowners benefit from the support policies. As noted by Winters, the loss calculation from protectionism in agriculture is in its simplest form:

> (Producer gains) minus (Consumer losses) minus (Taxpayer losses) = deadweight loss for the economy as a whole.

Broader benefit/cost studies of international agricultural economics influence the policy debate. Winters (1995) notes that the quantification of the deadweight losses from agricultural support are relatively imprecise, but considers that in Europe losses of approximately 1% of EU's GDP looks plausible.

According to Gardner (1992), proponents of trade liberalisation have pointed out that something like USD 40 billion is a yearly world-wide deadweight loss caused by market interventions by countries which support farm product prices. But Gardner finds that these estimates lack a solid, integrated basis in theory and econometrics. Gardner says that the theory of agricultural policies has run increasingly toward emphasis on incomplete markets and other market failures which could justify intervention, but which is ignored in these studies, and the deadweight loss calculations are simulations from supply-demand models that are of questionable applicability. Gardner concludes that when accumulation of data is sufficient, economists are swayed regardless of theory and cast aside any theory obviously inconsistent with the data, but to be powerful, the data must be sufficient to tell its own story. According to Gardner, changes in opinion on the farm problem have occurred on the basis of data evidence, but econometric investigation did not make the difference. We have to agree with that data evidence cannot be changed and the theory must suit the facts. Nevertheless, estimating worldwide deadweight losses from agricultural support is not an easy task. We do, however, note that there is a deadweight loss. The question is more about how large it is, rather than if it is there.

In support of trade liberalisation, Rayner et al. (1993) discuss the net economic welfare gains from agricultural liberalisation. They find that unilateral liberalisation produces smaller gains than if all industrialised countries would liberalise. The figures they mention when

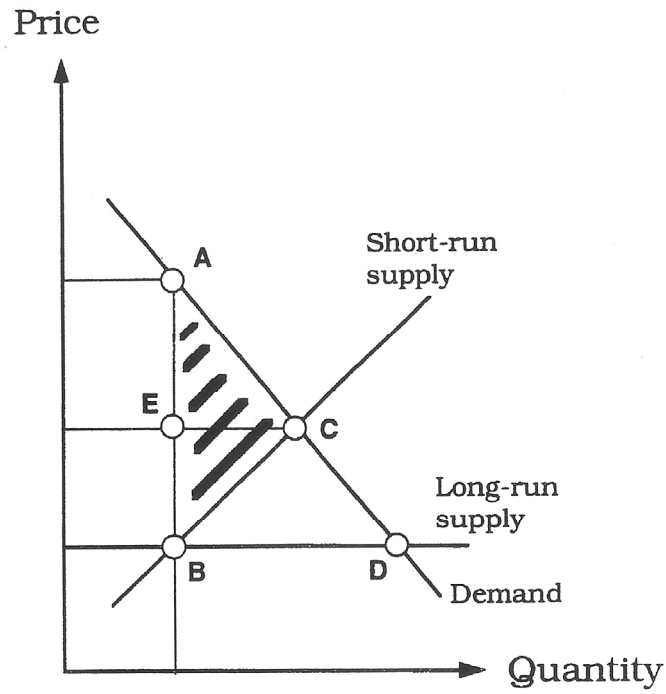
estimating the savings from liberalisation are measured in billions of dollars, which supports what others have said, that there are substantial savings to be made from agricultural trade liberalisation, although the actual estimated figure may vary. Interestingly, New Zealand liberalised their agricultural sector two decades ago, which resulted in increased efficiency without a collapse of markets. In line with Rayner et al. (1993), New Zealanders are unhappy with the lack of success World Trade Organisation (WTO) negotiations on freer world trade in agricultural products have had. Although New Zealand's production is now more efficient than before, it is difficult for them to compete internationally with subsidized production from other countries.

Gylfason (1995) points out that the average estimate of the total transfers from European consumers and taxpayers to farmers and landowners in the 1980s suggest a gross cost of 2% of the European GDP and a deadweight loss of about 1%. Gylfason (1995) finds that these figures are likely to be too low because they are based on short-run partial-equilibrium analysis that do not reflect the long-run consequences of favouring agriculture and thereby discriminating against other parts of the economy. Gylfason (1995) finds that when assessed with general-equilibrium techniques, the long-run gains from transferring labour, capital, and other resources from agriculture to industry, trade, and services, where productivity is higher, can in the long-run reach 3% of GDP. Gylfason (2003 Klagenfurt Conference and 2004 Empirica) points out that OECD consumers and taxpayers spend almost 1 billion Euros on agricultural protection per day. Gylfason (2008) also points out that the EU CAP is, nevertheless, less burdensome today than in the mid-1980s, but still costs over 1% of GDP.

Harberger's triangle[155] refers to deadweight loss caused by government intervention into a "perfect market" in the form of price floors, price caps, taxes, tariffs, or quotas. The triangle comes from a price/supply graph at the intersection of the supply and demand curves being cut short so that consumer surplus and producer surplus are also cut short. The loss of such surplus, not recouped by other means (e.g. tax revenue) is the deadweight loss. Gylfason (1995) shows how the deadweight welfare loss from a trade distortion is larger than initially expected (Figure 13 on next page).

[155] Named after U.S. economist Arnold Harberger.

Figure 13. Deadweight welfare loss from trade distortion



Source: Gylfason (1995)

In Figure 13 above, the short-run deadweight welfare loss is represented by the triangle ABC. However, when the long-run supply is theoretically indefinitely elastic, the deadweight welfare loss is the larger triangle ABD. Needless to say, such large deadweight losses are not limited to agricultural support policies, but apply to all interventions.

The World Bank has often received criticism (see e.g. Jones and Hardstaff (2005), "Denying democracy. How the IMF and the World Bank take power from the people"). The criticism is for being too much of an international businesslike capitalist institution heavily influenced by richer nations. The World Bank is aware of this image problem and this should not be seen in "black and white". The World Bank has undertaken academic research or promoted several studies on agricultural liberalisation and the views presented diverge drastically. Although agricultural liberalisation has been successful in some parts of the world, such as in New Zealand, not everybody thinks liberalisation is a universal success. Deininger and Olinto (2000) find the effects can be negative and mention African experiments (e.g. Zambia) as an example. Dorward et al.

(2005) also arrive at a similar conclusion that African agricultural liberalisation has not always been successful. In a European scenario, Matthews and Walsh (2005/2006) find that industrial liberalisation scenario generates positive gains to Ireland, while agricultural liberalisation would have a slightly negative effect on the overall economy. According to Matthews and Walsh (2005/2006) the negative effect from agricultural trade liberalisation on Ireland would arise because gains in allocative efficiency from lower agricultural protection would be offset by the loss of net transfers from the EU agricultural budget as export subsidies were eliminated. GATT/WTO talks have often been aimed at transparency and replacing non-tariff barriers with tariffs. Ingco (1995) notes that tariff barriers are a step forward and create transparency, but imposing too high tariffs does not solve trade problems and are therefore not always a good replacement for non-tariff barriers. Ingco (1997) finds that: (1) The changes in welfare are significantly affected by the structure of trade and distortions in the domestic economy. (2) Although many economies are hurt by increases in world prices, losses in terms of trade are small relative to total GDP. Only in a few countries does the estimated welfare change constitute more than 1 percent of GDP. (3) In several countries, the distortion effects are significantly larger than the terms-of-trade effects. In some cases, the distortion effects work in opposition to the terms-of-trade effects and are large enough to reverse the sign of the net welfare change. In short, removing policy distortions could convert the small loss in terms of trade to potential gains. Nevertheless, many less-developed, net food-importing countries did not use the WTO Uruguay Round to support domestic efforts at trade reform. As most studies show, most gains from multilateral liberalization come from the countries' own liberalization efforts, so countries that failed to liberalize their trade policy lost the opportunity for gains.

Mehta and Narsalay (1999) say that there is no consensus on the hypothesis that trade liberalisation on its own can lead to poverty reduction and it needs to be reiterated that in most developing and poor countries governments are often unstable and unable to implement pro-people policies due to corruption, nepotism, inertia, etc. Mirzaei (2006) says: "The impact of globalisation on poverty is a subject where there are strongly held views but relatively little detailed empirical evidence, particularly at the micro level. Some view globalisation as a panacea which will reduce inequality and contribute to the elimination of poverty on an international scale, while others are deeply suspicious of the process, believing that it will lead to further concentration of the benefits of growth, both inter- and intra-nationally. On both sides the links

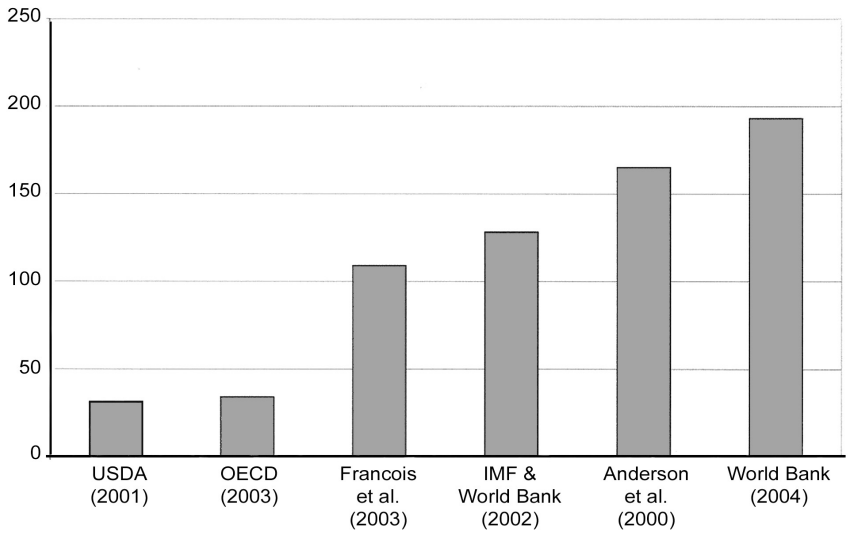
between globalisation and poverty outcomes are rarely established empirically, tending rather to be assumed a priori. Some of the most abject poverty in the world is concentrated in farming communities." Temu and Winter-Nelson (2001) note: "If commodity market liberalization is to improve incentives for production it must reduce the total costs of transforming products through space, form and time, and the costs of arranging transactions in complete agricultural systems. While liberalization often leads to reduced costs in output exchange, it can remove opportunities for linked input-output transactions that served to lower the costs of providing finance in state-controlled markets. Assessments of liberalization that focus on output exchange alone obscure or ignore the impact of rising transaction costs in finance." Winters (2000) and Winters (2002) notes that controversy rages about the link between trade liberalisation and growth. He notes that there are many opinions claiming that liberalisation is positive, but there is no absolutely clear link between liberalisation and poverty, neither one way nor the other. Liberalisation needs to be done with careful support policies in order to reach its aims.

Salazar and Martin (1993) are positive about agricultural liberalisation and find that by adopting the Dunkel package (Uruguay Round, GATT (now WTO)) global trade liberalization would give developing countries 60 billion USD gain a year or more, even without productivity gains stimulated by rising world prices for agricultural commodities.[156] With productivity gains taken into account, total gains from partial reform would be more than 130 billion USD per year for non-OECD economies. Hertel et al. (1999) are also positive on liberalisation. They find that the global economy would gain 60-70 billion USD per year from 40% cuts in market price support and domestic subsidies to producers. Van Tongeren, (2005) summarises the different findings as shown in Figure 14 on next page. The problem we find with Figure 14 is that it shows assessments made be economists in the more developed world. As shown above, it appears that some observers of and/or from Less Developed Countries (e.g. Deininger and Olinto (2000), Dorward et al. (2005), Mehta and Narsalay (1999), Mirzaei (2006)), are more hesitant about liberalisation than those who are from OECD welfare states (e.g.

[156] Here we should stop one moment and think. Are rising food prices a good thing? The answer is: For farmers and net food exporting countries, yes, as long as the rises are because of increased demand but not because of increasingly expensive input factors or taxation. However, rising food prices are never good for consumers. Some individuals can pay a high price in order to show net welfare gains for a society as a whole.

USDA, OECD, IMF, and the World Bank's economists). We ought to remind the reader of the uncomfortable fact that for many contemporary economists the words "hunger" and "food prices" are just academic expressions, perhaps because of the tremendous successes the food (overproduction) policies in the EU and the USA have had over the last half-a-century. Many of us were not born when these policies were introduced out of necessity.

Figure 14. Estimated yearly world welfare gains from full agricultural liberalisation (in billions of USD)



Source: Van Tongeren (2005)

With all this being said about waste of resources, we should recall that reduced protection and increased liberalisation have risks. In support of how serious food production and food shortages are, the publications initiated by Dreze and Sen (1989 and 1990) on hunger highlight many aspects of famine and chronic food shortages. Dreze and Sen discuss various political, economical and social effects of hunger. Their work is somewhat focussed on those parts of the world which were struggling to feed themselves during first decades of the second half of the 20th century in Asia and Africa. During that period there were famine problems amongst other in India, China and parts of Africa. Here it is interesting to note the difference between famines per se, and permanent malnourishment amongst the poor of a population. Food shortage does not necessarily mean no food at all. Food shortages push prices up and

the poor will starve or will be malnourished, as they cannot afford the variety of food human bodies need. In some countries it is also the family hierarchy that decides who in a poor family gets the biggest share of the nutrition available. We should perhaps add, however, that government intervention is no guarantee for food and nutrition, as the central planning of the communist regimes in the Soviet Union and China in the 20th century have shown.

In our opinion, low food prices are ideal, but guaranteed supply of food is of higher priority. We find that the most common causes of famines are: (1) war with its consequent disruption of production and supply (still rampant in parts of Africa, - and still within living memory in parts of Europe), (2) failed government policies (e.g. in the Democratic People's Republic of Korea[157] in the mid 1990s), (3) food and crop diseases (e.g. as the potato disease in Ireland in the mid 19th century), (4) when the food requirements of an increasing population exceeds the food production capacity of the land (which is not yet a worldwide problem, but increasingly a local problem in some less developed parts of the world[158]). Although local famines have happened throughout history, a global famine in modern history is unheard of. Food production in the world is unlikely to cease in one go, leading to extinction of life, and reduced food supply will only hit those with less financial means. Since governments generally feel responsible for the welfare of their citizens, they usually want to ensure that everybody gets food. If there is short supply of food, rationing can be introduced in order to ensure that not only the rich can eat, but to make sure that everybody gets something. Rationing is often accompanied or supplemented by an illegal black market with higher than official prices. In order to avoid the situation of short food supplies, most governments have taken measures to protect agriculture, and in particular that part of it which deals with food

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[157] The Democratic People's Republic of Korea is commonly known as North Korea.

[158] Ice ages have come and gone, plagues and diseases have come and gone, and species have come and gone. The only new thing under the sun is the extremely rapid growth of the human population over the last 100 years. If this exponential population growth is not reined in through increased education and changed cultural attitudes, it will end in a disaster. When nature decides it is time for a mega-death of a species, it is not the nice way through birth control, but through death by starvation, disease and exhaustion. According to the UN Population Division, the human population was approximately 1 billion in 1800, 1 ½ billion in 1900, 6 billion in 2000, and is projected to be about 9 billion by 2050.

production. Steps such as those outlined in the treaty on the EU, or the Icelandic agricultural law, are examples of such precautionary measures.

Producing and storing food reserves costs money and this must be paid for. Individuals often store some food in their homes at their own private expense, and governments often maintain food reserves financed with taxpayers and consumers money. There cannot be much discussion on the necessity of maintaining some food reserves in order to prevent human catastrophes in case of natural or man made disasters, such as animal or crop diseases, draught, war, etc. But what is generally open to discussion is how big the reserves should be, and how to finance and dispose of overproduction. Financing a slight overproduction of food is similar to paying an insurance premium against disasters. In theory, supply and demand regulates itself when left to free market forces, leaving no unsold surplus production. But a temporary imbalance in the markets can lead to shortages, which in the case of food is not acceptable. Consequently, some government intervention is needed to finance the overproduction or "food insurance" by buying surpluses and storing them.

In the light of Winters (1995) and Penson et al. (1996) comments on the arguments favouring protectionism, we should note that it is not only import restrictions that can be imposed by national governments to protect national food supply, but export restrictions can be applied also. Import restrictions are usually intended to keep domestic food prices high to support local producers, but export restrictions are the opposite, usually intended to keep domestic food prices low so the local population can better afford the food. After several years of slowly but steadily falling food prices, in the years 2007 and 2008 the prices went somewhat up again. This was caused, amongst other, by increased fuel prices, food producing agricultural land being diverted to grow bio-fuels, and increased demands from the world's ever growing population for food and fuel[159]. The reduced supply caused particularly rapidly rising world prices on grain and rice, which prompted some countries to ban or restrict its export to ensure that their own, but less well off population, would have adequate food supply. Such an export ban is a strong argument that rich industrialised countries might not always be able to buy on the world markets the food they want in case of large and urgent need. Needless to repeat, food is different from any other goods traded by man, simply because people cannot survive without it. If the supply is too low and the

[159] E.g. in China, where increased wealth promotes increased meat consumption, but meat production requires more grain to feed the livestock than if Homo Sapiens ate the grain directly.

food is not produced at home, it will cause a conflict, - in a worst case an armed conflict.[160]

From a global perspective, the ongoing disparities between industrialised countries and less developed countries (LDCs) are a continuing and growing problem. Some LDCs have a population growth that is faster than their GDP growth, which leads to increased poverty, whereas in industrialised countries the opposite is the case. Agriculture in LDCs is labour intensive, but wages are low. In contrast, agriculture in industrialised countries uses much machinery and is capital intensive, but uses little labour. The labour in industrialised countries is more expensive than in LDCs. Consequently, it seems logical to push farmers in industrialised countries into more productive professions than farming, and in fact the farming community in industrialised countries has been on a slow but steady decline for many decades. In LDCs the effects of a free and non-subsidized trade would be different than in industrialised countries. Dumping of subsidized food exports from richer countries on the markets of LDCs would stop. Most countries don't need cheap or free food, but an economically viable production of their own. LDCs would therefore have to increase their own food production and thereby create new jobs and employment at home. But the larger markets for exports and own consumption of home-grown food would initially push food prices in LDCs up, until equilibrium would be reached. Cheap subsidized imports ruin LDCs farmers' jobs with social-economic consequences. This is one of the reasons the WTO talks on increased free trade are running into difficulties.

Adam Smith's (1723-1790) statement: "It is the maxim of every prudent master of a family, never to attempt to make at home what will cost him more to make than to buy..." makes economic sense in an ideal and peaceful world, but from a political, strategic, and security viewpoint,

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[160] Gylfason (1995) finds that a national security argument is not very convincing and states that even during World War II entire countries were not cut off from foreign food supplies. In its strictest sense it is true that entire countries, according to their pre-hostilities borders, were not entirely cut off, but during the Second World War (The Great Patriotic War) many areas nevertheless suffered very serious food shortages, especially large cities, occupied, and besieged areas (e.g. Leningrad), and even parts of the European Western front (e.g. parts of France). During the Vietnam War, the United States made efforts to destroy North Vietnamese rice crops in the early 1960s by the use of chemicals. Even in more recent times, during the Yugoslav War of Disintegration during the 1990s, cutting of the food supply was just as efficient method of political coercion as artillery shelling, e.g. Bihac, Central Bosnia, and Sarajevo (see e.g. various comments on food supplies in Bjarnason (2001) and (2007 reprint)).

where food could be used for coercion or as a weapon, the policy makers have to consider more than pure economics. Moving production of food and other goods out of richer welfare states to LDCs may be taken by some as either exploiting cheap labour in the LDCs or as creating unemployment in the richer countries, or both. Thus we are facing a problem from both an economic and social point of view. Nevertheless, we believe that creating food-manufacturing jobs in LDCs suffering from endemic unemployment problems would be a good sign. Consequently, as there would be less employment in industrialised countries' agriculture, the newly unemployed farmers in the richer countries would have to change over to other more profitable production, - or accept lower wages in order to compete with cheaper imported food. Because of labour unions the latter case of lower wages for farmers is almost impossible to achieve. Changes will be painful, both in industrialised countries and LDCs. As such, changes may take a very long time.

Although the idea of importing food to industrialised countries may sound tempting, it is more complicated than that. Climate is a factor that influences heavily which agricultural production is most suitable. Bananas can be grown in Icelandic greenhouses, but being close to the Arctic Circle, Iceland is certainly not the ideal place to grow tropical fruits. Similarly, trying to produce reindeer meat in Africa in some sort of air-conditioned farms, instead of in Lapland or Greenland, would be a rather futile attempt. The reader ought therefore to keep in mind that liberalised trade under fair competition benefits consumers (every single person in the world is a food consumer), whereas a simple statement that all food should be imported to industrialised countries is over-simplified and far from correct. Food production and food trade is not only a question of sufficient calories to consume, but also a question of an appropriate variety to fulfil both nutritional requirements and consumer choice.

The literature reviewed on agricultural policies almost universally indicates that agriculture in industrialised countries such as EU and Iceland, as it is managed today, is unnecessary wasteful and the production could be cheaper. Data also shows that in industrialised countries, farmers add less per worker to the GDP than the average of other professions. We have not found much literature arguing for how to finance the food supply guarantee. It seems that most contemporary authors have not personally suffered food shortages and consider it more as an academic issue rather than life threatening. The question of absolute guaranteed food supply for all the population under all circumstances regardless of price, because possible starvation is not even considered a

possibility, seems to be left out when agricultural policies in many industrialised countries are criticized. From a political-economic viewpoint, the discussion on the imperfection of markets and market failures is often forgotten, possibly because it hasn't happened in industrialised countries since the Great Depression and the Second World War, while the focus seems to be more on the waste and how to get food prices down. We are of the opinion that it is excellent to get the food prices down, but at some point there could be a risk of market collapse if pressed too far, or in the case of imports, a supply disruption would have drastic and perhaps also costly consequences. This is one of the reasons why politicians and practitioners pay little more than lip service to the criticism. The literature suggests that although agriculture is an economic activity, there are other factors such as ecology, social issues, safe and secure food supply, as well as rural culture and tradition which have to be considered. We find that there is a universal lack in the literature on how to reduce the waste and improve economic efficiency while still guaranteeing safe and secure food supply. In other words, there is criticism, but few remedies. It is also interesting to note that the harsher the climate, such as in Iceland, the higher the agricultural subsidies, which for the purpose of this study indicates that although the EU CAP might be wasteful it still appears more efficient than Icelandic agriculture. Our overall impression from the agricultural literature is that the facts on production and economics are quite well known, but the question is more what policy managers wish to do. This is in contrast to management of fisheries (Chapter 7) where the facts on fish stocks and sustainable yield are not known for certain.

6 – 2 EU Common Agricultural Policy (CAP)

The EU's Common Agricultural Policy (CAP) is one of EU's most important common policies. It was provided for in the original treaty on the European Economic Community (EEC) in 1957 (Treaty of Rome), the first mechanisms were adopted in 1960 and it came into force in 1962. The CAP has been an integrated part of the European Communities (now European Union) ever since. The objectives of the CAP, as laid out in the treaty, are to:

(1) Increase agricultural productivity by promoting technical progress and by ensuring the rational development of agricultural production and the optimum utilization of the factors of production, in particular labour,

(2) Ensure a fair standard of living for the agricultural community, in particular by increasing the individual earnings of persons engaged in agriculture;

(3) Stabilize markets,

(4) Assure the availability of supplies,

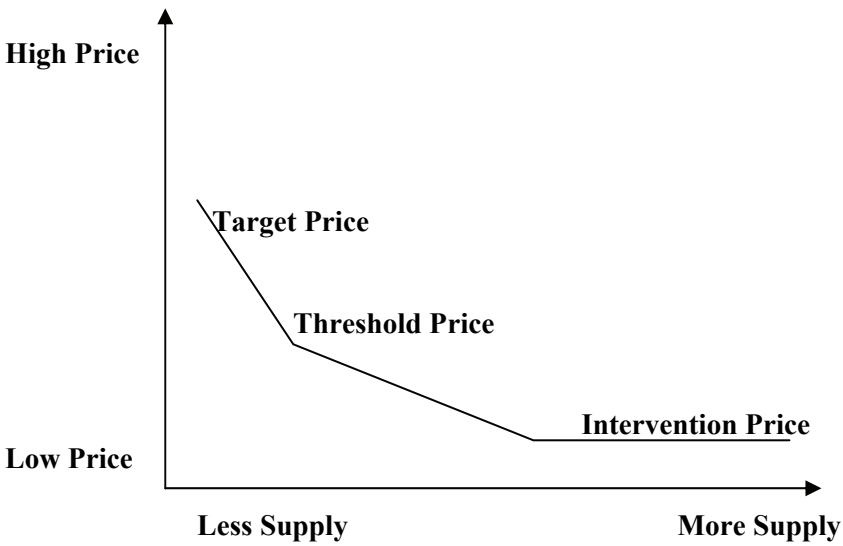
(5) Ensure that supplies reach consumers at reasonable prices.

A common organisation of EU agricultural markets is established, which includes common rules on competition, compulsory co-ordination of the various national market organisations and a European market organisation. This includes in particular regulation of prices, aids for the production and marketing of the various products, storage and carryover arrangements and common mechanisms for stabilising imports or exports. There should not be any discrimination between producers or consumers within the Community. Agricultural goods are supposed to flow freely within the EU, unhindered by any member state's trade barriers and unhampered by member states' national subsidies or administrative regulations, which might limit or distort intra-community competition. But this is not a fully free trade system based on market principles because the European Council (EU ministers of agriculture) sets most prices. These set prices include:

* Target price, which is the price it is hoped that farmers will obtain on the open market.
* Threshold price, which is the price Community imports are raised by when world prices are lower than EU prices.
* Intervention price, which is the price the EU will take products off the market by buying it up.

The price support system is very costly to finance, and the CAP absorbs around 50 billion Euros per year[161], which represents almost half of the EU yearly budget. Figure 15, below, shows that prices on agricultural goods in Europe cannot go below the intervention price, in contrast to a freely flowing price-supply curve where theoretically the greater the supply the lower the price.

Figure 15. The CAP price support system.



The CAP has reached its original objectives with brilliant success. EU farmers are not any worse off than other Community manual labour, the food supply is guaranteed with vast reserves, and almost all Community citizens can afford to buy and eat food, although, theoretically, the food could be somewhat cheaper. Despite the success, some of the original objectives of the CAP have gone a bit overboard. Agricultural efficiency has increased greatly, and farmers' incomes have grown similarly to other sectors, and questions are raised why the taxpayers must support farmers. The Community, as it was in 1957, was a net importer of food, producing only about 85% of its needs. Today, the EU is a net exporter, producing about a quarter more than it consumes.

[161] E.g. 47 billion Euros in 2005 and 53 billion Euros in 2008 (including the EU enlargement in 2007).

Some food surpluses are stored and accumulate, and other are exported, but because world prices are determined by supply and demand, the EU has to subsidize its exports, the EU prices usually being higher than the world prices. These export subsidies have to be paid by the EU taxpayers. At the same time, they undermine food producers outside the EU, who do not all benefit from the same guaranteed prices the EU farmers enjoy. In other words, by importing certain types of food, the food consumed in the EU could be cheaper. It appears to be the unwritten objective of the CAP that the EU will not become dependent on outside suppliers, - the authors and signatories of the Treaty of Rome (1957) all remembering very well the food supply problems caused by the Second World War.

In working out the CAP, account is taken of the particular nature of agricultural activity, which results from the social structure of agriculture and from structural and natural disparities between the various agricultural regions, the need to effect the appropriate adjustments by decrees, and the fact that in the member states agriculture constitutes a sector closely linked with the economy as a whole. The CAP is active as such and a number of measures have been taken to lower prices, diminish the surpluses, breaking the link between overproduction and payments to farmers by taking up direct non-production related payments, and allowing selected preferential imports.

From the mid 1960s and throughout the 1970s financial assistance was provided for the restructuring of farming, aiding farm investment, aiming to ensure that farms developed in size, management, and technology skills so that they would be adapted to the economic and social climate of the day. Some human and territorial elements were introduced in the form of assistance towards early retirement and vocational training and specific support measures for less favoured areas. By the 1980s, the EU had to contend with almost permanent surpluses of the major farm commodities, and as mentioned above, some were exported with the help of subsidies and others had to be stored or disposed of within the EU. These measures had a high budgetary cost, distorted some world markets, did not always serve the best interests of farmers and became unpopular with consumers and taxpayers. Consequently, in 1992 important reforms were agreed on which involved reducing support prices and compensating farmers by paying them direct aids. Several rural development measures were introduced, notably to encourage environmentally sound farming. Production limits helped reduce surpluses and farmers had to look more to the market place, while receiving direct income aid, and to respond to the public's changing priorities. This shift of emphasis in the CAP entered a new phase with agreement in 1999 on the so-called “Agenda 2000”

reforms. These reforms reinforced the move to make farmers more reliant on the market and improved incentives to farm in an environmentally sensitive way. They added a comprehensive rural development policy encouraging many rural initiatives while also helping farmers to diversify, to improve their product marketing and to otherwise restructure their businesses. The budget available to the CAP was also set out several years in advance, thus allowing farmers to plan ahead with more certainty.

For many years there have been talks to fundamentally review the CAP. Although agriculture only counts for about 2.1 % of the EU GDP and about 4.3 % of the EU employment (year 2000, Table 4 on page 45)[162], the farming lobby is politically rather strong with almost 18 million people in 2005, including family and non-family agricultural labour force.[163] The CAP criticism remains the unnecessarily high prices and the surplus production, although the surpluses are smaller today than they were one or two decades ago. The fundamentals of the CAP as laid out in the original treaty are not likely to be changed, but the implementation is likely to develop further over the coming years in order to accommodate some of the critics. It seems to be that the more often the CAP is changed or reformed, the less it changes in reality[164].

The European Agricultural Guidance and Guarantee Fund (EAGGF) was set up in 1962 to finance the CAP. It had two sections, the Guarantee Section and the Guidance Section. The Guarantee Section financed expenditures on agricultural market organisation, rural development measures that accompanied market support, some veterinary expenditure, and CAP information measures. The Guidance Section financed rural development expenditure not covered by the Guarantee Section. As of 1 January 2007 the role of the EAGGF was essentially split into two, the European Agricultural Guarantee Fund (EAGF) and the European Agricultural Fund for Rural Development (EAFRD). The funds' financial commitments are shown in Table 17 on next page.

[162] Eurostat 2009 preliminary figures indicate a number close to 1.4%, but there is a slight difference between sources.
[163] Eurostat survey on the structure of agricultural holdings.
[164] The French saying: « Plus ça change, moins ça change » is very applicable, (the more it changes, the less it changes).

Table 17. EAGF and EAFRD financial commitments for 2008 in millions of Euros[165]

Administrative expenditure of agriculture and rural development policy area	130
Interventions in agricultural markets	4 032
Direct aids	36 832
Rural development	12 927
Pre-accession measures in the field of agriculture and rural development	85
International aspects of agriculture and rural development policy area	6
Audit of agricultural expenditure	-342 [166]
Policy strategy and coordination of agriculture and rural development policy area	31
Administrative support for Agriculture Directorate-General	N/a
Total	**53 701**

Source: EU 2008.

[165] Rounded off to nearest million.
[166] Minus indicates that some expenses were recouped.

6 – 3 Debate on European Agricultural Policy

The European Common Agricultural Policy (CAP) has succeeded in its goal to provide ample food supplies at affordable prices. Nevertheless, a large part of the academic literature on the CAP is negative, criticising it for being too wasteful and too expensive, with costly subsidies, international trade conflicts, overproduction and rather low incomes amongst farmers. Wasteful and expensive is relative and the European Commission (How does the European Union manage Agriculture and Fisheries, second edition, 1998) states that with a 1997 CAP budget of 41,3 billion ECU[167], this is only 2 ECU per week per citizen, which the Commission considered a small price seen in relation to the CAP benefits of safe, secure and varied food supply. This amount can be calculated further. Two Euros per week equals 100 Euros per year, which equals approximately 400 Euros per average family per year. In order for a European taxpayer to pay 400 Euros, he/she has to earn 600-700 Euros pre-tax. For a "Eurocrat"[168] earning 50-100 thousand Euros per year net of tax, this is a small amount, but for a labourer 600-700 Euros is a very substantial amount. That being said, the European food supply is for all practical purposes safe and secure, but variety is not assured by promoting some production at the expense of another. As a tribute to the system, diseases and problems have emerged, such as Mad Cows Disease or dioxin in the milk, but the system has so far easily coped with them and there have been no consequent food shortages, famines or starvation. A criticism is of course that diseases or poisoning were not stopped earlier, possibly because of national governments trying to cover up problems in order to preserve their markets.

Of a total yearly CAP budget of around 50 billion Euros, (about 100 Euros per EU capita), the benefits of the payments from the EAGGF (EAGF and EAFRD as of 2007) have caused some political asymmetries. When calculated as Euro per capita the 2005 figures are somewhat surprising as can be seen in Table 18 on next page.

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[167] ECU = European Currency Unit. ECU eventually became the Euro upon adoption of the EU single currency.

[168] Increasingly common term used to designate a civil servant (bureaucrat) working for the EU.

Table 18. EAGGF payments per country and per capita in 2005.

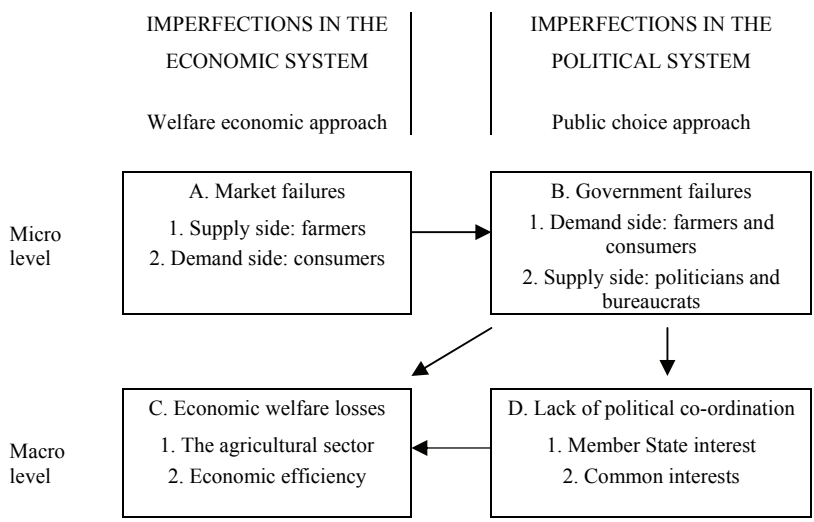
	Payments per country (Euros)	Payments per capita (Euros)
Austria	1 235 677 523	152
Belgium	1 034 518 724	99
Czech Republic	281 803 036	27
Cyprus	33 683 269	46
Denmark	1 224 924 634	227
Germany	6 503 133 482	79
Estonia	27 049 803	20
Finland	902 887 172	173
France	9 968 932 409	166
Greece	2 753 988 810	249
Ireland	1 806 207 799	448
Italy	5 499 732 003	95
Latvia	27 536 174	12
Lithuania	127 106 465	37
Luxembourg	44 968 753	100
Hungary	514 906 664	51
Malta	865 923	2
Netherlands	1 256 334 767	77
Poland	877 969 206	23
Portugal	891 857 592	85
Slovakia	114 400 011	21
Slovenia	32 942 152	16
Spain	6 406 487 931	152
Sweden	956 282 834	106
United Kingdom	4 215 046 455	71
EU 25	**46,7 billions**	**102**

Source: European Commission & Eurostat (2006). Per capita calculation by author (2006).

The variations in payments shown in Table 18 above are interesting for government finances, but they do not touch the consumers directly, since these payments are to the countries' farmers but not to the consumers as citizens. With direct payments to farmers, which are an increasing trend both in Iceland and the EU, there is no way anymore to conceal the financial transfers from the taxpayers to the farmers. As noted by Kjeldahl (1994), this may lead to increased political opposition to these financial transfers. The European Commission states that it is the farmers

who are the primary beneficiaries of the CAP, but the consumers also benefit in the form of safe and secure food supply at "affordable" prices. Affordable prices are, however, not the same as being as cheap as possible. CAP policies and prices are based on political decisions, but not on economic formulas. Berkhout and Meester (1994) note that the CAP is a part of social policy, reallocating the agricultural budget among farmers, while Nedergaard (1994) adds that the net welfare costs, budget costs, environmental costs and surpluses dumped on the world markets have had serious disadvantages. With these facts in mind, in trying to answer the question why the CAP continues in this somewhat negative path, Nedergaard (1994) sees that the starting point has always been "market failures". He finds that "government failures" are an overlooked issue. Nedergaard (1994) presents his model of analysing the European agricultural policy :

Figure 16. Nedergaard's model analysing EU's agricultural policy



Source: Nedergaard (1994)

Nedergaard (1994) and Keeler (1996) find that the bargaining procedure is a reason for the CAP decisions. Although a qualified majority in the Council of Ministers would be enough, there is a tradition for taking unanimous decisions on the price supports for individual products. The result is time-consuming negotiations, since every country

can practically veto the outcome. Higher price support is the result and the budget expenditure increases. An inter-disciplinary school of thought in political science and psychology, "political psychology", can explain this behaviour to a certain degree. Contrary to private business leaders, politicians and government bureaucrats do not receive personal remuneration based on financial gains or savings they obtain. They attend a meeting with the purpose of achieving a peaceful negotiated consensus where personal financial gains are not a factor. Given the way human nature is, this makes them somewhat complacent. In general terms this indicates that politicians will be more generous with public money than private individuals and private enterprises are with their own hard earned funds. Politicians are usually motivated by trying to keep as many happy as possible and by a human (and animal) tendency to avoid unnecessary confrontations. The result is a compromise and increased overall expense. The political psychology of the EU as an "institution" is also a willingness to cooperate and keep everybody onboard, rather than ignoring minority interests. Keeler (1996) refers to this as the "restaurant syndrome" where the final bill is split between everybody at the table. The one who ate the most comes out winning, but at everybody else's expense. Keeler also points out that the policy legacy of the EC's early years with large farming communities and the need for a stable food supply for the population, along with bureaucratic interests where the CAP and it's civil servants has a central stage in the EU, contributes to making changes difficult. Ministers would likely be more careful with national expenditure than EU common expenditure. However, with the number of farmers constantly declining, the pressure from the farm lobby to support high prices and to receive direct payments will decline.[169] This, however, does not by any means indicate that the EU might be willing to go back to become a net importer of food, even though it meant lower food prices.

Food production in Europe per se does not become cheaper or more expensive because of the CAP. The farmer still needs a certain income, capital and land. It is imports at world market prices that could push food prices down. The CAP prevents free imports and distorts competition. In the case of duty free imports, some European farmers would face financial distress or even bankruptcy unless they receive direct payments or other government compensation. As long as the EU has

[169] Under the assumption that one farmer means one vote, plus the votes of his family and close friends. Fewer farmers also mean fewer members of farmers' associations and fewer to participate in demonstrations, although fewer farmers can mean larger farms with somewhat more bargaining power.

import barriers on food, food on the whole will not become cheaper in Europe. The CAP, however, influences who pays for the food. Rather than using supply and demand, where everybody pays what he or she eats, the involvement of taxpayers' money redistributes the budget so the higher taxpayer pays more than the poorer man.

The CAP has often been criticized for its costs, but seldom praised for providing a secure food supply. Nugent (1994) states that different opinions exist about how well the CAP and CAP reforms have worked, but avoids taking an agro-political-economic position. However, he emphasises the influence and high profile agriculture has in the EU. According to Tsoukalis (1993), the efficient allocation of resources and the maximisation of global welfare has been almost an exclusive concern of neo-classical economics. He adds that politics in the real world are not only about efficiency, but also about distribution, i.e. between EU countries, regions and social classes. Tsoukalis shows the evolution of the EC budget revenue, from just over 16 million ECUs in 1980, to approximately 60 million ECUs at the publication of his book in 1992. Furthermore, he shows the structure of the budget expenditure over the same period, where in fact the total CAP expenditure goes up by more than the double (approximately 12 million ECUs in 1980 to about 28.5 million ECUs in 1990), but as a percentage of the budget expenditure, it goes down from 73% in 1980 to 61% in 1990. We would like to add that the 2005 CAP budget of 47 billion Euros is close to 45% of the EU total budget.

Through the years there has been periodic but regular talk about reforming the CAP. Kjeldahl (1994) in his "Introduction to Reforming the Reform? – The CAP at a watershed; Renationalisation of the Common Agricultural Policy", points out that as support becomes more transparent, complicated welfare economic analysis and abstract explanations are no longer required to demonstrate the economic cost, and that politicians and taxpayers understand who gets the money and who pays. Other authors in the same publication, "Renationalisation of the CAP", Delorme (1994), Berkhout and Meester (1994), and Nedergaard (1994), all start with the assumption that the CAP has not been particularly successful. Looking at the evolution of the CAP, Feld (1979) noted that in the beginning EU (then EC) agriculture was a story of action and success. But soon the problems started to arise. Although farm income and food supply grew, the general public was faced with ever-higher fixed prices on food and food surpluses were tremendous. Today, over a quarter of a century after Feld wrote his paper, the CAP is still under criticism for the same problems. Either nothing has been done to improve the CAP, or it is

impossible to improve it, or the criticism is unfair and unfounded. We may add that it is often easier to criticize than to give constructive advice on improvements. Our opinion is that many studies of the CAP miss the point: the CAP was never intended to reduce deadweight losses in the European macroeconomy, but to produce safe and secure food for all Europeans at an affordable price. This aim has been very successful.

Runge and von Witzke (1990) say that in less developed countries the agricultural population (a majority) is often heavily taxed, whereas in developed countries the agricultural population (a minority) is heavily subsidized at the expense of the non-agricultural sector. In this context, the EU (EC in 1990) may be considered as a developed country. The EU CAP supports agricultural prices at levels considerably above world markets and it is the Council of EU Agricultural Ministers that makes annual decisions on agricultural prices within the Union (see also Figure 15 on page 141)[170]. The findings of Runge and von Witzke are a part of the basis where some of our assumptions are made, notably that in the EU and Iceland there is a flow of money from taxpayers and consumers to farmers, and that food prices are higher than ideal. Keeler (1996), in line with the other critics, starts with the fact that the CAP has been widely criticized for excessively burdening consumers and taxpayers, stimulating surplus production, and wreaking havoc on world markets through price distortions and subsidized exports. Keeler finds this increasingly surprising because the number of agricultural workers in the EU (then EC) has fallen from 21% of the workforce in 1961 to just under 7% in 1990,[171] and the EU agricultural output as a percent of GDP has fallen from 4.8% in 1973 to 2.4% in 1990 [172]. Keeler notes how many people are puzzled over how such a shrinking minority can exert such an influence over the politicians as to retain subsidies and support at the expense of the majority. He explains this by that consumers do not feel the unnecessary high food prices because of increased real income gains. The average European household's income spent on food has declined from 28% in the mid 1970s to 21% in the mid 1990s.[173] Keeler also points out that individual farmers will lose more than individual consumers will gain by

[170] We would like to note that the procedure of having politicians and bureaucrats decide market prices has a striking resemblance to the communist era Soviet GOSPLAN, where the government planners fixed the prices.
[171] In 2000 it was down to 4.3%.
[172] In 2000 it was 2.1%.
[173] At the turn of the 21st Century food prices as a percentage of EU households' disposable income were even less than 20%. However, global food prices are now slowly rising again.

eliminating the subsidies, making consumers more docile about the situation. Nevertheless, we should point out that welfare economics show the opposite: consumers gain more than farmers will lose. This is because the farmers are few and grossly outnumbered by the consumers. Total gains or losses for society does not equal an individual's gain or loss. Farmers' interests are concentrated whereas consumers' interests are diffuse.

Patterson (1997) points out CAP's sometimes conflicting objectives and its side effects. The objectives were to increase agricultural productivity, increase individual earnings of persons working in agriculture, to stabilize markets, to safeguard supplies, and to ensure that supplies reach the consumer at reasonable prices. But the side effects were overproduction, which resulted in drop in prices and export subsidies. Patterson discusses the 1992 CAP reform package, which initiated a shift from non-transparent consumer subsidies to the more transparent taxpayer subsidies in the form of direct payments. Patterson feels that farmers are justified in worrying about this increased transparency because taxpayers will demand reduction in agricultural subsidies when they see how much of their money supports inefficient agricultural production. Indeed increased transparency is a way to reduce waste since it either inadvertently or intentionally becomes more exposed to the political and the public eye.

The CAP system has traditionally subjected imported goods to a levy equal to the difference between the world market price and the higher EU price of a product. The recent reform has been to move more over to direct payments to farmers. Rayner et al. (1993) point out that the EU producers will suffer losses if trade is liberalised. Some EU producers will then either go out of business, or have to receive some kind of compensation. With increased pressure from the international community and the World Trade Organisation (WTO) to liberalise trade, direct payments to farmers, de-coupled from production, seems to be a solution, at least during a transition state. As Beard & Swinbank (2001) state, there is a political case where ministers are unlikely to make substantial reforms in the CAP unless farmers get some compensation; there is the economic case where the sudden removal of CAP price supports would lead to many farmers' bankruptcies; there is the moral case where farmers have been led to invest unwisely in a non-profitable business; and there is the welfare case where the winners (the consumers) should compensate the losers (the farmers). Continuing in contemporary fashion, Beard and Swinbank find that de-coupled payments should facilitate CAP reform. They find that the existing CAP has outlived its usefulness, although the

EU still has a role to pursue environmental and rural policy objectives, and in ensuring food security and food safety. Beard and Swinbank say that the EU has in the past falsely encouraged agricultural business expectations, and de-coupled payments will avoid bankruptcies throughout the rural economy if the CAP is reformed. This would allow farm businesses to adapt and the EU to develop new policies for the countryside. They suggest that the compensation payments should be for a certain period only, and then be gradually reduced. Furthermore, they suggest payments should not be conditioned upon future farming activities or upon specific environmental conditions. At the time of this writing, direct payments to farmers appear to be the political fashion-idea, both in the EU and in Iceland. We find it doubtful if direct payments to farmers, regardless of production, are a long-term solution, since the taxpayer would find it difficult to justify in the long term. This would be a deadweight loss to the economy as a whole, and must be accompanied with the political decision to support domestic food production with minimal import barriers. Receiving payments regardless of production leads to large inefficiencies, as the motivation to produce something is not rewarded. If done on a long-term basis, fixed payments for claiming the title of a "farmer" or "landowner" will become just another form of social security, unemployment benefits, or financial transfers on a substantial scale.

This all leads to the political decision if Europeans want to be self-sufficient in food. If they wish to be self-sufficient, an extra price must be paid in the form of more expensive production than if the food is imported from less developed countries. Direct payments to farmers do not reduce the production costs for the society. If the consumer pays a lower price in the shop and higher taxes, or lower taxes and a higher price in the shop, it could be expected that the budget's end result will be similar, although the one who pays the higher taxes will partially pay for the one who pays the lower taxes. However, this is not necessarily the case as subsidies can stimulate less efficient production and encourage production of other goods than the consumer might wish for. Direct payments will become a tool to either support an uneconomical industry or to hide unemployment. If the goal is to have some food reserves, direct payments to farmers are not the ideal way to encourage food surpluses, although they are instrumental in keeping farmers on their farms, thereby maintaining regular and continuous agriculture. But payments linked to production encourage overproduction, which must be accumulated, destroyed, or "dumped" on the world markets by export subsidies. We believe that to accumulate reserves, the governments must simply buy a

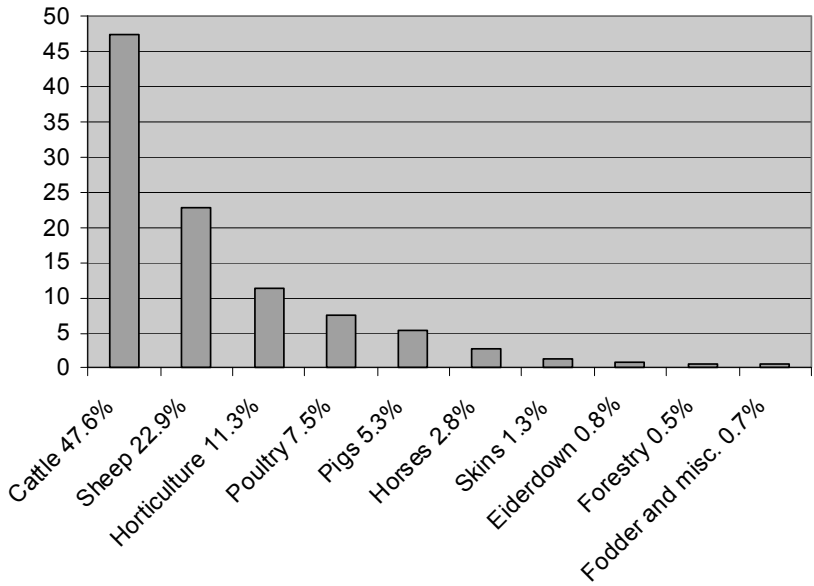
certain quantity of food at regular intervals and store it. Our opinion is that producing exactly what is consumed is not a safe policy, simply because food is much more important than any other good produced. The consequences of food shortages could be a problem measured in human tragedies, rather than monetary units, which is the main reason why so many governments spend taxpayers' and consumers' money on agricultural protection.

Little has been written about Icelandic agriculture compared to the large quantities of publications on the CAP. Of some of the more recent literature on the Icelandic agricultural policy we would like to draw attention to the writings of Agnarsson and Johannesson (2005), who mention the general particularities of agricultural production, notably that expenses devoted to food purchases normally have priority over all other expenses and that demand for agricultural products is relatively immune to price change. They also note that the production cycle is relatively long from the decision to produce until the goods are on the market, and that this relatively lengthy production cycle can result in that circumstances change from the offset until the final steps are reached, e.g. through weather conditions, market changes or diseases. These reasons, coupled with concerns about insufficient food production have led to government interventions such as minimum prices, production subsidies, production restrictions, import restrictions, quotas and direct payments to farmers. Agnarsson and Johannesson list the evolution of Icelandic agriculture and amongst other mention the fact that the authorities seem to have favoured farmers at the expense of the consumer, which they explain by historical reasons. They conclude by suggesting that the objectives of the agricultural policy could be better defined, that import restrictions should be abandoned and direct payments to farmers used instead, and that production related support to farmers should not be restricted to certain products only. Their work is a good overview over Icelandic agricultural policy and how it has evolved. Most important we note that the agricultural policy and agricultural policy instruments used in the EU and in Iceland are remarkably similar.

6 – 4 Icelandic Agricultural Policy

Natural conditions for farming in Iceland are very harsh because of the cold climate. Over ¾ of the agricultural production is related to animal husbandry as shown in Figure 17 below.

Figure 17. Icelandic agricultural production in 2005 by branches



Source: Farmers Association of Iceland. [174]

Icelandic agriculture enjoys one of the highest protections in the world with a PSE[175] between 60-70%, (comparison shown in Figure 12 on page 125). Consequently, Icelandic consumers have to live with some of the highest food prices in the world. As shown in Table 19 on next two pages, Icelandic food prices are the most expensive found in the EEA and about 60% over the EU average.

[174] The reader will notice that the total adds up to 100.7 %. A similar overview from the same source in 2002 added up to a total of 99.0 %. Possible explanations are the use of round numbers, overlapping figures, and difficulty in obtaining exact data.

[175] Producer Support Estimate (definition in Annex 2 on pages 250-251).

Table 19. Price comparisons on food in EU, EFTA and Iceland. Year 2006. 100 is reference for EU average.

	Iceland	Austria	Belgium	Bulgaria	Cyprus
Food and drinks	164	110	110	56	107
Food	163	111	111	55	104
Bread and cereals	188	126	109	41	108
Meat	189	121	123	48	80
Fish	112	111	128	62	142
Milk, cheese and eggs	149	98	109	82	139
Vegetables and fruit	154	107	105	50	90
Non-alcoholic drinks	176	97	101	73	142
Alcohol and tobacco	193	90	97	58	104
	Denmark	**Estonia**	**Finland**	**France**	**Czech Republic**
Food and drinks	142	75	120	105	69
Food	139	74	119	107	68
Bread and cereals	150	70	141	103	61
Meat	149	64	119	122	60
Fish	138	73	110	106	76
Milk, cheese and eggs	116	79	110	100	80
Vegetables and fruit	129	83	124	108	64
Non-alcoholic drinks	170	90	132	83	82
Alcohol and tobacco	119	63	135	108	66
	Germany	**Greece**	**Hungary**	**Ireland**	**Italy**
Food and drinks	105	98	71	125	115
Food	106	97	70	124	116
Bread and cereals	108	94	60	121	109
Meat	118	91	65	129	118
Fish	121	101	75	123	122
Milk, cheese and eggs	87	138	83	126	126
Vegetables and fruit	116	72	65	130	115
Non-alcoholic drinks	103	118	77	135	109
Alcohol and tobacco	98	87	63	181	105

Table continued on next page

Table continued from previous page

	Latvia	Lithuania	Luxembourg	Malta	Netherlands
Food and drinks	69	64	115	83	88
Food	68	63	116	81	89
Bread and cereals	59	61	119	76	89
Meat	58	50	120	69	105
Fish	71	57	110	82	115
Milk, cheese and eggs	75	75	112	111	78
Vegetables and fruit	73	68	130	70	89
Non-alcoholic drinks	89	79	104	108	83
Alcohol and tobacco	53	55	87	96	98
	Norway	**Poland**	**Portugal**	**Romania**	**Slovakia**
Food and drinks	158	66	88	71	67
Food	159	65	87	70	66
Bread and cereals	164	60	95	59	56
Meat	182	52	82	60	58
Fish	128	67	70	85	68
Milk, cheese and eggs	160	67	105	94	75
Vegetables and fruit	143	72	80	70	62
Non-alcoholic drinks	160	84	93	88	76
Alcohol and tobacco	222	64	85	56	59
	Slovenia	**Spain**	**Sweden**	**Switzerland**	**United Kingdom**
Food and drinks	87	92	119	142	114
Food	87	93	119	146	113
Bread and cereals	93	112	131	142	103
Meat	83	81	133	195	126
Fish	102	89	109	142	91
Milk, cheese and eggs	83	96	104	126	115
Vegetables and fruit	86	95	123	131	120
Non-alcoholic drinks	88	87	118	104	121
Alcohol and tobacco	70	71	128	96	175

Source: Statistics Iceland (2009).

We would like to draw attention to that the figures shown in Table 19 (on the previous two pages) are 2006 data. In 2003 the Icelandic food price level was 63% higher than the EU, compared to 64% reported in Table 19, which is an insignificant difference. Because of the unusually rapid rise and fall of the Icelandic economy at the end of the 2000-2008 economic cycle, figures for the years 2007-2010 can be misleading for long-term economic assessments. The rapid fall in value of the Icelandic Krona in 2008 temporarily reduced domestic food prices, measured in Euro, to levels comparable to the EU. More expensive imports of both food and production factors, (e.g. tractors, fuel and fertilizers), along with farmers (reasonable) demands for income rises in proportion to rising inflation, will push Icelandic food prices up again. The new price level remains to be seen, but considering the relatively unchanged Icelandic agricultural inputs and outputs, there is little reason to think that relative food prices will drastically differ from the years preceding the economic bubble.

Agriculture was the mainstay occupation in Iceland for centuries and censuses from the mid-19th century show that 70-80% of the nation lived from farming at the time. This proportion decreased as the 20th century wore on, and towards the end of the century this was down to 4% with approximately 4700 farms, accounting for close to 6000 man-years of labour. Family farming with relatively small farms is overwhelmingly the most common arrangement and in some cases two families work the same farm. Majority of farmers own their land and it is common that the same families have owned farms for many decades.

The Great Depression of the 1930s, and the economic boom of the World War Two years, shaped both the Icelandic economy and agricultural policy. The Great Depression led to a drastic fall in world prices of agricultural products, which consequently affected the prices of products in Iceland. Government intervention in agricultural production and marketing began in 1934, when a law was passed introducing price administration and the division of the country into marketing regions. Imports of many agricultural products were prohibited. Prices were determined by a price review board and set considerably above world market prices. During the war, price subsidies at the wholesale level were first introduced in 1943 as a reaction to inflation, and in 1947, the Agricultural Production Board was established, which provided the basis for the marketing and pricing system of agricultural products. The main rule has been to fix prices to secure farmers' earnings comparable to other similar occupations.

Throughout the first half of the century and into the fifties, supply of meat and dairy products was insufficient. However, production increased at a rapid rate as a result of the price policy and through the use of various investment grants to farmers. Farming became ever more capital-intensive and use of fertilisers increased rapidly. Production increased, especially in the 1950s when the volume of agricultural production rose by close to 50%. By the early 1960s, the market for agricultural products had reached equilibrium. Production, however, continued to increase at a fast rate and the rate of growth in supply far outstripped that in demand. The difference was met with exports that were subsidized by the government.

Around 1980 public and political sympathy for maintaining the system, not to mention increased payments, was diminishing. The first steps towards reducing export subsidies were taken when a new agricultural law was passed in 1985 on production, pricing and sales of agricultural products. The main objectives of that legislation were to:

(1) Promote structural adjustment and increase efficiency in agricultural production and processing for the benefit of producers and consumers,

(2) Adjust the level of production to domestic demand and secure sufficient supply of agricultural products as far as practicable at all times,

(3) Ensure that export opportunities will be utilized to the extent that is considered feasible,

(4) Ensure equitable income of farmers to that of other comparable professions,

(5) Maximize the utilization of domestic inputs to agricultural production with regard to security and employment,

(6) Facilitate equality between farmers with regards to prices and market access,

(7) Integrate environmental issues with agricultural policies.

The 1985 law meant that there would be reduced export subsidies and production control measures in the form of quotas on certain products. In the years that followed, in order to replace some of the wholesale and export subsidies, the introduction of direct payments to farmers was taken up in certain fields of production.

Until recently, Icelandic domestic agricultural production was protected from foreign competition by law. Import was not allowed as long as domestic supply was adequate. This changed with the agreement on the establishment of the World Trade Organisation (WTO). Following the WTO agreement all market protection had to be translated into tariffs,

which are subject to gradual reduction.[176] Although the Icelandic tariff levels are high and presently provide protection against import of most competing products, (other than what is imported under the minimum access provision), the borders have now been opened and the Icelandic farmers have to prepare themselves for increased external competition in the near future. Currently, import quotas have been translated into tariff quotas, where a certain amount of foreign agricultural products can be imported at a reduced tariff. These tariff quotas are auctioned to the highest bidder(s).[177] There is also a provision to adjust tariffs to protect domestic production in accordance with domestic demand. In this way the authorities want to promote selling of domestic food products before imports arrive on the market. Due to natural circumstances, it is going to be tough for Icelandic farmers to compete with cheap imports in the future.

Besides import duties, the Icelandic government support to agriculture is also in the form of direct payments to some farmers, (currently focussed on milk production, mutton and lamb production, and transitional payments in horticulture), state funded advisory services to farmers, support for farm improvements, livestock production and livestock improvements, marketing, and loans and/or grants from the Agricultural Production Fund. The various state subsidies are shown in Table 20 on next page. We would like to draw attention to that although the total amount shown is two times higher in per capita terms than what the EU uses on the CAP, some EU member states also have additional agricultural expenses to the CAP expenses, e.g. education and research.[178] The OECD PSE[179] measurements are a better comparison of agricultural support than just the direct financial subsidies.[180]

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[176] Iceland has used veterinary rules to restrict certain agricultural imports. It is open to discussion to what extent this is only because of concern about diseases, or if this is in fact just hidden economic import restrictions.

[177] There is nothing that precludes the possibility that a domestic producer buys the quota and does not use it, in order to prevent foreign market access.

[178] As an example, France has a total agricultural budget approximately 60% higher than the EU allocation and Denmark approximately 25% higher.

[179] Producer Support Estimate, (definition in Annex 2 on pages 250-251).

[180] As noted earlier, Iceland has a PSE close to 60% and the EU 35-40%.

Table 20. Icelandic state financial support to agriculture in 2008, in millions of Kronas

Advisory service	249
Livestock production	74
Farm improvement programs	90
Agricultural Production Fund	160
Marketing projects	25
Mutton and lamb production	3 348 [181]
Milk production [182]	3 881 [183]
Horticulture	255 [184] [185]
TOTAL	**8 082**

Source: Compilation of agreements between the Government of Iceland and the Farmers Association of Iceland (detailed in the bibliography).

In the eyes of the local consumer, the main strength of Icelandic agriculture is tied to an opinion that its products offer healthier food than most other countries because of the hitherto more strict regulations that prohibit the use of growth hormones for animals and the use of soil and plant "contaminants" like herbicides and insecticides. Tradition and consumer preferences play a role in the production and marketing as many consumers are willing to pay a somewhat higher price for quality products, be it perceived or real. As the OECD (Agriculture and the Environment in the Transition to a Market Economy, 1994) has pointed out, these different environmental standards give the country with lower standards a competitive advantage[186].

Traditionally, in Iceland it has been difficult to decide where to draw the line between rural policy and agricultural policy as the two are inseparable and seem so interwoven that the general political debate neither makes nor accepts the differentiation that ought to be. All this government intervention changed the social attitude of many farmers, who

[181] Of which 1 716 million Kronas is in the form of direct payments to farmers.
[182] Refers to the pricing year 2008/2009.
[183] Of which 3 299 million Kronas is in the form of direct payments to farmers.
[184] Of which 195 million Kronas is in the form of direct payments to farmers.
[185] This figure does not include the Ministry of Industry subsidies to electricity, in the amount of 1.08 Kronas per Kilowatt-hour.
[186] A parallel can be drawn to EU resistance to genetically modified food.

have felt themselves often more like wage earners than as independent farmers.

The guidelines provided in the booklet "Icelandic Agriculture" published by the Icelandic Agricultural Information Service (1997) state:

1. Agriculture shall be in harmony with the environment. Production capacity of farming land shall be improved from one generation to the next;
2. Emphasis shall be placed on land reclamation and forestation;
3. A high standard of animal welfare shall be a prerequisite for livestock production;
4. The production of wholesome and pure foods shall be the cornerstone of Icelandic agriculture;
5. Quality control shall be encouraged throughout all production processes;
6. Determined efforts shall be made to strengthen certified organic production and other sustainable forms of agricultural production;
7. The countryside shall remain a viable and dynamic community;
8. The earnings and social conditions of the agricultural community shall be attractive enough to make farming a worthwhile profession;
9. The general public shall be made aware of the fact that the farming heritage is a cultural treasure that needs to be preserved.

Unfortunately for the consumers, in these guidelines there is nothing about trying to reduce food prices. The same applies to subsequent agricultural laws passed by the parliament in 1993, having similar objectives as the original 1985 law. The 1998 agricultural law also stated that the objective is to support development in Icelandic agriculture, to increase competitiveness, that government financial support should aid in the development of new products and production means, and that Icelandic farmers should not be worse off than farmers in neighbouring countries. Low food prices are not the highest priority.[187] Point 9 in the objectives from the Icelandic Agricultural Information Service (listed above) indirectly indicates that the public is expected to support farmers and farming whether they like it or not.[188] There are also open questions on the environment. A slogan has been that "farmers

[187] Icelandic law no. 99 of 8 September 1993, chapter X, paragraph 51, part (a) notes that government support to milk producers should, amongst many other provisions, reduce price on milk to consumers.

[188] A parallel may be drawn to other uninteresting cultural events funded by taxpayers' money where admissions and ticket sales would not cover the expenses. It is not difficult to imagine that many taxpayers would like to see their money spent on other things than supporting farming as a cultural issue.

cultivate the countryside". Traditionally it has been the opposite, and human settlement in Iceland has taken its toll on the nature where freely roaming herds of sheep have in many places stripped the land. Of course it can be argued what is prettier from a human perspective, sheep on barren land or wild vegetation.

Concerning external trade, the balance of imports and exports in Icelandic agricultural products is somewhat difficult to establish exactly as the classification of products is not always the same, e.g. clothes made from wool or cotton (agriculture) but processed (industry), processed food, or drinks. However, when estimating the exports, using an approximation in its broadest sense, which includes freshwater fish such as salmon and trout (but not fish from the high seas), riding horses (horses can be eaten as well), animal husbandry products, horse products, cattle products, pork products, sheep products, fox and mink products, milk products, eiderdown, marine vegetation and algae, as well as other small miscellaneous categories, the total Icelandic agricultural export in 2004 was approximately 22 thousand tonnes, worth 4.3 billion Kronas or approximately 50 million Euros[189] (Table 21 on next page).

[189] 2004 average exchange rate Icelandic Krona / Euro. The exchange rate between Euro and Icelandic Krona is shown in Figure 9 on page 99.

Table 21. Export of agricultural products from Iceland in 2004

	Weight in Kilograms	Value FOB[190] ISK
Live horses	469 650	660 651 569
Other farm animals	113	839 738
Horse products	289 806	33 191 904
Cattle products	316 206	29 287 450
Pork products	81 967	6 038 519
Sheep products	4 195 926	865 354 804
Mink products	24 501	398 740 488
Fox products	7 836	36 142 019
Products of other farm animals	128 469	15 290 114
Milk products	638 242	80 878 474
Down	2 160	159 740 276
Seaweed and algae	10 175 379	339 041 953
Salmon	4 002 227	1 069 187 211
Trout	787 506	415,740 909
Other fish (excluding wild fish from the sea)	122 216	128 982 172
Other agricultural products	396 752	22 198 232
SUM TOTAL	**21 638 956**	**4 261 305 832**

Source: Statistics Iceland (2006)

When estimating the 2004 imports we have included the main categories: live animals; meat and processed meat; milk products and eggs; corn and cereals; vegetables and fruit; sugar and honey; coffee, tea, spices and chocolate; animal feed; drinks; tobacco; fur, skins and leather; biological oils, including animal fat, plant fat and seeds, but excluding fuel oils; wood and cork; fibres; fish and fish products for consumption, but excluding fish imports for processing plants; and "miscellaneous" food products based on data obtained from Statistics Iceland (2006). This amounts to a total of 466 thousand tonnes of goods, worth almost 27 billion Kronas FOB[191] and 30 billion Kronas CIF[192] or approximately 320 million Euros FOB and 355 million Euros CIF (2004 average exchange rate Krona / Euro). The details are shown in Table 22 on next page.

[190] FOB. Transport term. Free On Board.
[191] FOB. Transport term. Free On Board.
[192] CIF. Transport term. Cost Insurance Freight.

Table 22. Estimation of imported agricultural products to Iceland in 2004

	Kilograms	FOB ISK	CIF ISK
Life animals	11 212	21 696 320	35 762 315
Meat and processed meat	288 090	198 511 905	213 039 783
Milk products and eggs	426 205	179 215 359	207 040 812
Cereal and processed cereal	82 658 356	3 332 787 728	3 788 679 643
Vegetables and fruit	38 660 911	3 872 046 512	4 650 118 337
Sugar, sugar products and honey	14 708 456	709 332 396	800 815 682
Coffee, cacao, tea and spices	4 908 485	1 559 899 756	1 664 794 497
Animal feed less non-milled grain	18 205 702	703 580 765	780 843 712
Various processed food	7 523 479	2 527 455 257	2 711 042 403
Drinks	12 673 589	2 077 699 751	2 325 286 989
Tobacco and processed tobacco	442 687	1 121 921 434	1 145 026 406
Hides, skin and fur, unprocessed	390	58 935	102 320
Oilseeds and oil nuts	792 672	44 564 229	50 336 264
Cork and wood	60 363 176	2 118 816 088	2 443 715 780
Spinning thread and waste	133 899	35 405 904	39 450 611
Non-processed goods from animals and plants	156 154 739	1 384 345 502	1 562 562 352
Animal fat and animal oil	3 348 591	395 415 006	422 138 175
Plant fat and plant oil, non-processed	4 608 672	354 507 300	389 908 282
Other fat and oil, non-processed	1 040 724	98 871 681	108 511 725
Leather, leather goods and fur	72 102	124 926 882	138 551 047
Fish and processed fish (for consumption but not for processing plants)	59 131 062	5 982 625 084	6 591 192 317
SUM TOTAL	**466 153 199**	**26 843 683 794**	**30 068 919 452**
Note 1: The list may not be completely exhaustive although all main categories are included.			
Note 2: The list includes products that are a mixture of agricultural and industrial products, e.g. processed food and wood.			
Note 3: Primary source on all imports: Statistics Iceland (2006). Categories selected by author.			

Although the categories and definitions in Table 22 above can be open to discussion, there is clearly a substantial net importation in agricultural products in its broadest sense, excluding fisheries from the high seas, where Iceland is indeed a large net exporter (discussed in Chapter 7). Since Iceland is not a "closed economy", there is both import

and export in several goods when using general classifications, such as meat and milk products, although when going into more details, there are different kinds of meat and milk products, which is not reflected in the overall statistics. This is not a question of struggling to get sufficient calories to feed the population, but more a question of consumer choice in a welfare society.

It is also noticeable how the relative importance of agriculture in Iceland has declined over the years as shown in Table 23 below.

Table 23. Icelandic agriculture as a part of Icelandic GDP

Year	Percent of GDP
1980	5.1 %
1990	2.6 %
2000	1.8 %
2005 [193]	1.5 % [194]

Source: National Economic Institute of Iceland (2002), except for year 2005, which is from Statistics Iceland (2008).

When looking at Table 23 above, the reader ought to bear in mind that in the period 1980 to 2000, the total Icelandic GDP increased by 67% and GDP per capita rose by 36%.[195] It is also very interesting to note how the total manpower in agriculture has drastically dropped during the last half century as shown in Table 24 on next page. The main reason for this reduction is advances in technology with increased machinery and automation, but it is also a game with statistics. One century ago many persons were directly engaged in producing their own foodstuffs. The statistics today do not count persons as agricultural workers who are engaged in food distribution, e.g. truck drivers and supermarket employees which is considered as trade/services, food processing factories which is an industry, and fuel distribution for agricultural machinery,

[193] The 2005 figure is from Statistics Iceland. The other figures are from the National Economic Institute (NEI), which was closed down in 2002. The Statistics Iceland figures differ slightly from the NEI. The Statistics Iceland figure for 2000 is 2.0%, for 1990 it is 2.5% / 2.6%, and for 1980 it is 4.8%.

[194] For comparison, the EU average for 2005 was 1.3% (EC Directorate General for Agriculture), and 2.1% in 2000 (Eurostat).

[195] Statistics Iceland. With year 2000 reference set at 100%, 1980 produced 59.68% as a total GDP and 73.55% per capita. The Icelandic GDP continued to rise fast between 2000 and 2007, but it will likely fall (or correct itself) in 2009 and 2010.

although many of those workers are directly and indirectly engaged in feeding the population.

Table 24. Distribution of Icelandic manpower by industry in %

Year	1940	1960	1980	1990	2000	2005
Agriculture	32.0	16.0	7.9	4.9	2.8 [196]	2.4 [197]
Fisheries	14.0	8.0	5.3	4.9	4.0	2.7
Industry and construction	21.0	36.0	34.5	28.5	24.4 [198]	23.1 [199]
Trade and services	33.0	40.0	52.3	60.9	68.8	71.7

Source: From 1940 to 1990, National Economic Institute of Iceland (2002). From 2000 to 2005, Statistics Iceland (2008).[200]

[196] This figure is based on data on workforce market studies from Statistics Iceland. The same data computed by Statistics Iceland based on advance tax payments shows 4.4%. Statistics Iceland has informed us that 2.8% is closer to reality. We should add that manpower in agriculture is not always an exact figure. On small family farms it is the farmer who is the "official" agricultural worker, but often his wife and children help out and can be considered as part-time workers.

[197] This figure is based on data on workforce market studies from Statistics Iceland. The same data computed by Statistics Iceland based on advance tax payments shows 3.4%. Statistics Iceland has informed us that 2.4% is closer to reality. See also previous footnote.

[198] Whereof the fisheries industry is 4.3%.

[199] Whereof the fisheries industry is 3.9%.

[200] The National Economic Institute (NEI) of Iceland was closed down in 2002.

6 – 5 Comparison of EU and Icelandic Agricultural Policies

6 - 5. a. Purpose.

The purpose of the EU CAP and Icelandic agricultural policy is similar. Both promote agriculture as an important profession or industry. Both aim at creating a safe and steady food supply. Both aim at protecting farmers' incomes. Both aim at preserving the countryside. Both are a mixture of rural policy and food production. Both aim at maximum self-sufficiency in food production.

The policies differ in that the EU CAP refers to providing consumers with reasonable food prices, while the Icelandic agricultural policy does not.

Neither the EU CAP nor the Icelandic agricultural policy has the aim of lowest possible food prices.

6 - 5. b. Structure.

Both the EU CAP and the Icelandic agricultural policy are based on government intervention rather than leaving agriculture to completely free market forces. Both have used protective tariffs, production quotas, export subsidies, fixed prices and transfer of consumers' and taxpayers' money into farmers' pockets. Both are adapted to the GATT and WTO rules and use tariffs as import restrictions. Both have taken up limited direct payments to certain farmers as compensation for their losses caused by competition from cheaper imports.

6 - 5. c. Management.

Both the EU CAP and the Icelandic agricultural policy are a legacy from the time when food supplies were limited. Both have achieved to reverse that situation, which is by far their most important achievement. Both are constantly reviewed or reformed to adapt to changing situation. Both also suffer from a very strong farm lobby where farmers' demands and political pressure often limits drastic reforms.

6 - 5. d. Economic Comparison.

Both the EU CAP and the Icelandic agricultural policy are a deadweight loss to the economy. The current EU CAP PSE[201] is around 30-40% and Iceland's PSE around 60-70%. Food prices in Iceland are

[201] Producer Support Estimate (definition in Annex 2 on pages 250-251).

considerably higher than in the EU (detailed in Table 19 on pages 155-156 and discussed at the top of page 157) and as a general rule both the EU and Iceland maintain higher consumers prices than world market prices. Because of harsher climate and a smaller economy, Icelandic domestic food production is more expensive than European food production. Because of distance and the isolation of the island, transport costs are also higher for food imported to Iceland. The main barriers to economic efficiency of both policies are the protective import tariffs, but there are political reasons for this protection.

6 – 6 Effects of Icelandic EU Membership on Icelandic Agriculture

6 - 6 - A Savings on food

There is a tremendous size difference between the EU and Iceland. Consequently, the effects on the EU from Icelandic agriculture falling under the CAP would be minimal. However, the effects of the EU CAP would be drastically felt in Iceland. By joining the EU there would be no customs duty on EU food and agricultural products imported to Iceland from countries within the Union. The state would save on bureaucratic import formalities by reducing the number of customs officials, but the farmers in Iceland would not get the same prices for their goods as they enjoy today. As noted before, food and drink prices in Iceland are considerably over the EU average, which should give ample possibilities for improvements. (Details in Table 19 on pages 155-156 and discussion at the top of page 157). Considering that approximately 15% to 20% of European households' expenses are spent on food[202], even a minor reduction in food prices would have noticeable effects. Allowing for that Iceland is an island rather far away from mainland EU and with a relatively small population, food prices are not likely to fall all the way to the EU average, simply because of transport and distribution costs. Table 22 (on page 164) shows that the differences between FOB[203] and CIF[204] prices are typically around 10% to 15%. The Institute of Economic Studies at the University of Iceland estimated in 2004 that EU membership could possibly reduce food prices in Iceland by 14%[205].

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[202] Statistics Iceland estimate around 15% (2002-2004) and Keeler (1996) about 21%. The European Commission reported 12% (2007), (30% in 1960), but food prices have risen rapidly in 2007 and 2008. According to FAO (2008), world agricultural prices have risen 5-10% in 2006 and close to 25% in 2007, with further increases in 2008. Average household spending is also somewhat misleading because poorer individuals use a much higher percentage than richer individuals.

[203] Transport term. Free On Board.

[204] Transport term. Cost Insurance Freight.

[205] According to the model referred to in the report "Comparison of food prices in Iceland, the Nordic Countries and in EU states (2004)" (written in Icelandic by the Institute for Economic Studies at the University of Iceland and presented to Parliament by the Prime Minister), 14% is an average figure. Some food would be reduced less, e.g. fruit and vegetables by 8%, milk, cheese, and eggs by 12%, (footnote continued on next page...)

Einarsson and Sturluson (2008) estimate this reduction could be up to 25%. Using empirical evidence, Iceland is often compared to the other Nordic countries and when Sweden joined the EU in 1995 Swedish food prices fell by close to 7% [206] and when Finland joined, also in 1995, Finnish food prices fell by about 11% [207].

If food prices in Iceland would go down by 10% by joining the EU and keeping in mind that European and Icelandic households spend around 15% to 20% of their income on food, consumer spending on food would then go down by 1½ to 2 percentage points:

(Income x 15 %) x 10 % = 1½ %

(Income x 20 %) x 10 % = 2 %

This means that disposable real income of every household would increase by 1½ to 2%. The more bold approach, that joining the CAP would push Icelandic food prices to a similar level as in Denmark, Finland and Sweden, i.e. approximately 20% lower than Icelandic prices, would mean 3% to 4% increase in disposable income, and still allow for food prices well over the EU average:

(Income x 15 %) x 20 % = 3 %

(Income x 20 %) x 20 % = 4 %

We can therefore conclude that joining the CAP would increase Icelandic households' disposable income by at least 1.5% and possibly up to 4.0%. If Iceland were also a member of the Euro-zone, price discrimination in the form of high profits by importers and retailers would

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(...footnote continued from previous page)
and some would be reduced substantially more, e.g. meat by 23%. The report points out that the model used is not perfect as it suggests, surprisingly, that Icelandic fish would be cheaper in Iceland if Iceland joined the EU. Einarsson and Onnudottir (2008) refer to this report and use the figure 10% rather than 14% as the lower estimation, and 25% as the upper limit, which is taken from Einarsson and Sturluson (2008).

[206] Statistics Sweden (Statistiska Centralbyran). The Swedish price index on food and drinks, other than alcoholic drinks, was 235,8 in 1995 and in was down to 219,4 in 1996. (1980 ref. set as 100). Sweden joined the EU on 1 January 1995

[207] Kuluttajatutkimuskeskus (National Consumer Research Center (of Finland)), published through "Virtual Finland", information service by the Finnish Ministry of Foreign Affairs, measured from November 1994 to November 1995 (Finland joined the EU on 1 January 1995). According to the same source, "food prices in particular were high due to an agricultural policy that aimed at self-sufficiency and a climate that is not favourable to agriculture".

become more difficult as it would be easier to directly compare prices to other Union members.

6 - 6 - B Labour efficiency

As shown in Table 24 on page 166, the number of agricultural workers in Iceland has been on a steady decline for many years. Currently about 2.5% of the Icelandic labour force is engaged in agriculture and they provide only 1.5% of the GDP. Interpolating Tables 23 and 24 on pages 165 and 166, the Icelandic agricultural worker produced 0.63% of the average worker in 2005, 0.64% in 2000, 0.53% in 1990, and 0.65% in 1980.[208] EU membership would open the doors for cheaper imported food and the number of agricultural workers would likely decline further. Although farmers will complain, this would in fact push agricultural workers to look for more productive jobs and should boost the GDP rather than reducing it. Assuming that in the years following EU membership half of the Icelandic agricultural workers would leave their jobs, where their current productivity is slightly under 2/3 of the average Icelandic worker, and then be employed in other sectors with average productivity, the GDP would increase by 0.5%, as shown below:

(1) Currently 2.5 % of the national workforce employed in agriculture is producing 1.5 % of the GDP,

(2) National workforce staying in agriculture is halved, to 1.25 %, which then produces only 0.75 % of the GDP (half of previous 1.5 % of GDP),

(3) The 1.25 % of the national workforce who left farming will now contribute 1.25 % (average productivity) to the GDP, instead of 0.75 % of GDP previously,

(4) The new production will be:
0.75 % of GDP (those who stayed in farming) plus 1.25 % of GDP (those who left for average jobs) = 2 % of GDP

(5) The increase will be:
2 % of GDP (the new production) minus 1.5 % of GDP (the old production) = **0.5 % of GDP**

[208] As noted earlier, FAO (1991) lists Iceland at 76-77%, which according to Tables 23 and 24 on pages 165 and 166 appears too high.

The number of farmers pushed over to other work because of rationalisation in agricultural production is impossible to calculate exactly, even a posteriori, and can only be a "guesstimate". It might be appropriate to note, nevertheless, that quality of life is not necessarily measured in GDP. Many farmers might be happier on their farm with a somewhat limited income, rather than with a higher income and more consumer goods but living in a large city.

6 - 6 - C Empirical evidence from neighbouring countries

Agricultural statistics from Finland and Sweden after they joined the EU in 1995 give some indication of what to expect in Iceland if Iceland joined the EU. Table 25, below, shows a decline in farming in Finland and Sweden after they joined the Union. We use the EU 15 members as a reference both for 1995 and 2005, as the enlargements in 2004 and 2007 would distort the picture.

Table 25. Decline in farming in EU, Finland and Sweden between 1995 and 2005 [209]

	1995	**2005**	**% Reduction**
Labour force (Number of agricultural workers)			
EU – 15 members	7 264 000	5 985 000	18 %
Finland	131 000	83 000	37 %
Sweden	88 000	71 000	19 %
Number of farms			
EU – 15 members	7 370 000	5 846 000	21 %
Finland	101 000	71 000	30 %
Sweden	89 000	76 000	15 %
Gross value added [210] (Millions of Euros)			
EU – 15 members	142 411	129 441	9 %
Finland	1 604	1 501	(6 %) [211]
Sweden	1 687	1 219	(28 %) [212]

Primary Source: Eurostat 2009. Calculation by author.

[209] Finland and Sweden joined the EU in 1995. For comparison purposes, the reference is EU-15 members for both 1995 and 2005.
[210] Year 1995 is replaced by 1997 for gross value added. Eurostat data is not available further back on this item. Due to differences in national accounting practices, national data is less suitable for comparison purposes than Eurostat harmonised data.
[211] The numbers in gross value added vary significantly between years, pending on the harvest. The numbers in brackets are therefore misleading. See explanations in the text.
[212] Idem.

Table 25 (on the previous page) shows that the reduction in Swedish agricultural labour force and number of farms is not different from the trend in the rest of the EU, but there is a noticeable reduction in Finland. The reductions in the Finnish agricultural labour force and number of farms beyond the EU trend are explained by that before joining the EU, Finland had many more small agricultural holdings than Sweden did (see e.g. Eurostat data on the size of agricultural holdings and Rosochatecka and Tomsik (2007)). But in Sweden there has also been a tendency towards larger farms and larger herds of livestock (Statistics Sweden 2008). Rationalisation has reduced the number of farms all over the EU, but at the same time the farms have grown bigger. Countries with many small farms are particularly transformed. Economics of scale applies to farming just like any other production and joining the EU opens up small local markets. Finnish farmers felt the change of joining the EU much harder than Swedish farmers because Sweden already reformed its agricultural sector in 1990 by removing internal market regulations (Kola et al. 2000 and Rabinowicz 2004), while Finland waited for the inevitable[213].

The numbers in Table 25 (on the previous page) showing gross value added, are fairly steady for the EU as a whole, however with a slight downward trend. This is normal, as the population in Europe that needs feeding has not changed much, but data for Finland and Sweden varies significantly between years, depending on harvest and other cyclical factors. The decline in gross value added in Sweden, shown in Table 25, is somewhat misleading. According to Eurostat, during the period 1997 to 2006 Sweden's highest gross value added from agriculture was in 2003 with 1717 million Euros and the lowest was in 2005 with 1219 million Euros. In the same period, Finland's highest gross value added from agriculture was in 2004 with 1650 million Euros and the lowest was 2006 with 1022 million Euros. Despite the fluctuations, according to Eurostat data, the long-term trend over the last decade is slightly downwards.

We are not able to detect any drastic change in the types of imports or exports in Finland and Sweden right after they joined the EU. However, immediately after joining the Union, producer and food prices fell (MTT Agrifood Research Finland and Statistics Sweden). This led to lower revenue amongst farmers, particularly in Finland with its many small farms. Another factor that has lately reduced revenue in agriculture,

[213] Kuosmanen (2001) notes that even if Finland had not acceded to the EU, heavy structural changes would have taken place in Finnish agriculture anyway, perhaps reducing the number of farms down to half by 2005-2006, compared to the situation at the beginning of the 1990s.

but should not be attributed to joining the EU, is rising prices on agricultural inputs, oil, fertilisers and feed. This problem is not limited to Finland and Sweden. Statements that Finnish and Swedish agriculture is worse of in the EU because of increased competition or lower subsidies are not entirely correct. The agricultural sector went through adjustments with fewer farmers. After the number of farmers and farms was adjusted to the new equilibrium, we cannot see any fall in productivity per farmer or per farm. The agricultural yield has increased in some sectors, e.g. cereal production in Finland increased from 72% of national self-sufficiency in 1995 to 102% in 2005, and litres of milk per cow per year grew from 5982 litres in 1995 to 7404 litres in 2005. In the same period the Finnish beef production fell from 98% of self-sufficiency to 89%. Over a 10-year period those are small annual changes, but it shows that the sector is not frozen, but constantly adapting. Shown in Table 26 below, we also note a long-term increase in food trade, both in imports and in exports.

Table 26. Food[214] imports and exports in Finland, Sweden, Iceland, and EU, in 1997 and in 2005, in millions of Euros

	1997 [215]	**2005**
Finland Imports	1 720	2 350
Finland Exports	1 000	870 [216]
Sweden Imports	3 820	6 460
Sweden Exports	1 920	3 550
Iceland Imports	180	300
Iceland Exports	1 150	1 420
EU 15 Members Imports [217]	48 530	67 110
EU 15 Members Exports	45 940	57 230

Source: Eurostat 2009

[214] This includes all food, drinks and tobacco.

[215] Eurostat data for this item are not listed back to 1995, the year Finland and Sweden joined the EU. Data from other sources is not comparable, e.g. according to the Swedish Agricultural Board (Jordbruksverket), in the period 1995 to 2005 Sweden's total food exports increased by 49% and imports by 36%.

[216] After a temporary fall in Finnish exports, in 2008 this figure is estimated to be 1220 million Euros.

[217] EU 15 members refers to the Union's size as it was when Sweden and Finland joined. EU 15 is kept for 2005 for reference purposes as the enlargements in 2004 and 2007 make statistics more difficult to compare.

According to available trade data, the increased trade shown in Table 26 (on the previous page) is not particularly food product specific, but more like increased trade in a large market pending on the best business deals, e.g. in 1996 Sweden imported 3500 tons of milk powder and exported 8900 tons, but in 2007 the imports were 7700 tons and exports were 48400 tons. However, it is noticeable that Sweden's external trade in food has increased proportionally more than Finland's, Iceland's, and the EU-15's average.

Bjarnadottir et al. (2003) note that if Iceland was a member of the EU there would be no customs duty on agricultural imports, which would lead to a lower price to producers and in turn lead to that Icelandic agriculture (producers and processors) would be worse off. We find that such statements must be considered in the wider social context, posing the question of macroeconomic benefits from EU membership. When Finland joined the EU it is correct that food prices went down to the benefit of consumers and Finnish farmers were concerned about their future. Rosochatecka and Tomsik (2007) confirm that the Finnish agriculture changed radically when Finland joined the Union, but has adapted well to the new and more competitive EU environment. They find that 10 years after joining the EU, Finnish agriculture has not lost out in competitiveness on the single EU market, but has tried to take advantage of it. The EU did not push Scandinavian agriculture into a new Ice Age, make the cows milk less or the corn grow slower. However, joining the EU forced economics of scale with larger farms and increased trade. The CAP did indeed force increased rationalisation in Finland, and furthered the ongoing rationalisation in Sweden, although after joining the EU Sweden had to reapply some government interventions, which had been abolished in the 1990 reform. The least efficient producers in those countries were forced out of the profession and into other sectors. The CAP subsidies are intended to ensure guaranteed food production in the EU, but to a much lesser extent to be a social policy or to act as a replacement for social aid. Agricultural production per se, in both Finland and Sweden, is not worse off under the CAP, but many small and part time farmers who previously received large national subsidies to enhance their income, seen in relation to the CAP subsidies, had to leave the profession or accept a lower income. We should also add that in any case, inside or outside the EU, protectionism will be increasingly difficult under the World Trade Organisation (WTO) regime and joining the EU probably only advanced developments and rationalisation that would have happened sooner or later anyway.

6 - 6 - D Agricultural subsidies

The exact amount of agricultural subsidies Iceland will get from the EU will be determined in accession negotiations. The EU aims at enhancing member states economies, but not to hamper them. The EU CAP was originally intended for the products of the original six EU member states. Later the CAP was adapted to accommodate the products of the new members and there is no reason to think that EU would not consider Icelandic agriculture and its specific products in a positive manner (see Figure 17 on page 154 on agricultural products in Iceland).

Total agricultural output varies between EU member states from 0.3% to 4.7% of their GDP.[218] Agriculture in the EU as a whole is approximately 1.4% of the Union's GDP.[219] In comparison, Icelandic agriculture represents about 1.5% of Iceland's GDP,[220] which is practically the same as the EU average, although the products differ. The number of farms per capita is also comparable in the EU and in Iceland, with 9.3 million[221] farms in the EU before the 2007 enlargements (18 farms per 1000 citizens) vs. 4700 farms in Iceland (16 farms per 1000 citizens), although the addition of the newest member states to the Union has increased the number of farms in the EU to 13.7 million. Most of these newly added farms are small and will undoubtedly follow the trend towards larger and fewer holdings, best shown by that the number is already down from 15 million in 2003.[222] Being on the average with production and number of farms, it is likely that the agricultural subsidies Iceland would receive from the EU would be close to the EU average (see Table 18 on page 146), or approximately 100 Euros per capita. With 300 thousand citizens in Iceland this amounts to approximately 30 million Euros per year.[223]

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[218] EC DG Agriculture (2007), referring to 2005 data.

[219] Eurostat data for 2007, published in 2009, divided by the Unions total GDP. There is a slight variation depending on the sources used. See also Table 4 on page 45 and Table 23 on page 165.

[220] Statistics Iceland 2005 data.

[221] Eurostat.

[222] Eurostat. Including the then candidate countries, which are now members.

[223] When corrected for inflation and exchange rate, this amount is very close to the amounts previously estimated by Herbertsson and Sturluson (2002), of 3.0 to 3.6 billion Icelandic Kronas per year (before the 2004/2007 enlargements), which in turn was based on estimates made by the Economic Institute of the University of Iceland in 1995, and that of Bjarnadottir et al. (2003) referring to Deloitte & Touche's estimate from 2003, indicating that EU support to Icelandic agriculture would be 2.2 to 3.0 billion Icelandic Kronas.

Agricultural subsidies in Iceland are higher than the EU average and we expect that if Iceland were EU member, Icelandic farmers would still enjoy relatively high subsidies as EU's agriculture in arctic and harsh regions does. The two northernmost members of the EU, Finland and Sweden, are divided into several areas considering the need for support. The supports that fall under CAP's common market organisation are financed entirely by the EU budget, but structural, regional and environmental aid is co-financed by the EU and national budgets. Furthermore, Finland and Sweden enjoy special provisions authorising nationally financed support to agriculture in their northernmost regions, which is roughly defined as territory north of the 62nd parallel. (MTT Agrifood Reasearh Finland 2008 and Statistics Sweden 2008). National authorities and the European Commission evaluate the northern aid regularly to see if the means applied are still justified. In Finland the northern aid is aimed at milk production, cultivated areas, greenhouse production, storage for horticultural products, wild berries, mushrooms and reindeer. In 2007 Finnish national aid to the north amounted to 329 million Euros, where of 167 million was for milk production and 101 million was based on livestock units (MTT Agrifood Research Finland). This extra northern aid costs the Finnish taxpayers 62 Euros per capita per year, or approximately 250 Euros per family of four. In Sweden the nationally paid northern aid is aimed at production of milk, pigs, eggs, goats, berries, potatoes and vegetables. In 2007 this amounted to 260 million Swedish Kronas (Statistics Sweden: Jordbruksstatistisk arsbok 2008), which equals approximately 26 million Euros (depending on the exchange rate Euro/Swedish Krona). This equals approximately 2.8 Euros per Swedish capita per year, or 10 Euros per family of four. The large difference in nationally sponsored northern aid between Finland and Sweden is explained by that Finland's geographical centre is further north than Sweden's, and that the Finnish national authorities are relatively more generous in their agricultural subsidies.

Icelandic government direct support to agriculture amounts currently to 8 billion Icelandic Kronas per year (Table 20 on page 160). The amount to be expected on agricultural subsidies from the EU is therefore only approximately half of the current support, i.e. 30 million Euros (about 4-5 billion Icelandic Kronas, depending on the exchange rate). To this may be added national support like Finland and Sweden are authorized to supplement their arctic agriculture with. As previously mentioned, in Finland the northern aid amounts to approximately 62 Euros per Finnish citizen (2007) and in Sweden just under 3 Euros per Swedish citizen. With Iceland having approximately 300 000 citizens,

this would amount to between 1 million and 19 million Euros, depending on whether Iceland chooses to follow the Swedish or the Finnish example. With all of Iceland being north of the 62nd parallel, we expect that nationally authorised support would be at least like in Finland. It is therefore clear that Icelandic taxpayers' and consumers' money handed out to Icelandic farmers in addition to the EU funds will to a large extent depend on what Iceland demands to be authorized to do in EU accession negotiations, without breaking the Union's competition rules on state aid. If Iceland is a EU member, it cannot use national allocations to subsidize Icelandic agriculture beyond what has been agreed with the EU in accession negotiations. If doing so unilaterally, it will be considered state aid to an industry and infringement of EU competition rules.[224] It is therefore important that extra national support be agreed upon in an accession treaty. It can thereafter be left up to Iceland if it wishes to exercise the right of national northern aid or not. However, indirect support to agriculture, such as research, education and advice, will undoubtedly continue unchanged. Although indirect support is strictly speaking also agricultural support, it is not in the form of direct aid. As noted earlier, member states have such national agricultural expenses beyond the CAP payments.

If Iceland chooses not to pay out if its own accounts a northern aid or arctic subsidy to itself, but only to finance agriculture through the CAP and joint EU and Icelandic projects, it will mean a drastic fall in total agricultural support for Icelandic farmers and agricultural corporations. A fall in support would initially lead to reduced income amongst farmers until a new equilibrium would be reached. Most likely the result will be rationalisation with larger but fewer farms, as was the case in e.g. Finland after it joined the Union. Finland and Sweden adjusted well to the new EU environment and there is no reason to think that Icelandic agriculture couldn't do so. Some fields of Icelandic farming would likely require more adjustment than other. The farming industry in Iceland adapted well during the past two decades when Icelandic consumer preferences moved from mutton and lamb to a more varied meat supply and there is no reason

[224] Finland had a dispute with the EU and with Sweden over national subsidies Finland continued to pay to farmers in southern Finland, several years after joining the EU. Those subsidies did not fall under the arctic and harsh climate clause and amounted to 94 million Euros in 2008. The EU and Swedish farmers said that these extra payments should only have been a transitional measure after joining the Union, but the Finnish authorities had given in to the Finnish farm lobby and continued the national payments, thereby distorting competition with farmers in neighbouring Sweden, where Finnish farm products are also sold.

to think that it could not adapt to increased EU competition and trade. This would require an adjustment period for the agriculture, where current investments are depreciated at a reasonable rate. Indeed this must be seen in view of the current trend for more automated farming methods and fewer and fewer farmers required to produce food, as has been shown by the steady long-term decline of manpower engaged in the profession.

It is worth noting that most of EU's agricultural subsidies go to large farmers and small farmers get less. The largest recipients of the agricultural benefits are large food and agricultural corporations. For comparison, it is also a problem in the United States, where agricultural support goes to large agricultural corporations, which receive millions in payments, and small farmers get less. The EU aims at transparency and recently the Union caved in to demands, along with most member states' governments, and started to publish who gets what in agricultural subsidies (see e.g. preliminary data from farmsubsidy.org). Consequently, the CAP payments and who receives them is getting increased public scrutiny.[225]

Reducing overall agricultural subsidies from Iceland's PSE[226] level of over 60% down to the EU level of 30-40% is likely to benefit all citizens, except the recipients of the higher subsidies, which are the Icelandic farmers. In fact, in more general terms, it is likely that all EU citizens, not only Icelanders, would benefit from somewhat lower food prices by reducing agricultural subsidies from current levels. Nevertheless, we are not convinced that a fully free market system is advisable on such an important commodity as food.

6 - 6 - E Expected savings in agriculture

We can now summarize the Icelandic macroeconomic savings from joining the CAP, based on the assumption that Iceland would not negotiate in EU accession negotiations that Icelandic taxpayers' money be used for additional subsidies beyond what came from the EU. This, however, cannot be ruled out as the example from e.g. Finland shows and the surprising strength of the farming lobby compared to its size. The EU

[225] E.g., two Italian companies received over 100 million Euros in 2008, and several received over one million Euros in agricultural subsidies (ref. Farmsubsidy.org and Euobserver.com). With such amounts of money, it is hard to imagine their national politicians and lobbyists doing anything but resist change. Even large banks, such as the French Credit Agricole, received 91 million Euros in rural subsidies (ref. Farmsubsidy.org).

[226] Producer Support Estimate (definition in Annex 2 on pages 250-251).

would pay Iceland approximately 30 million Euros in agricultural support,[227] which is close to half of what the current national support is. Households' savings would be between 1.5% and 4% of disposable income. Considering that half of the Icelandic GDP is from income, households' savings would equal 0.75% - 2% of GDP. Farmers moving to more productive jobs is difficult to estimate, but could possibly provide gains close to 0.5% of GDP. Joining the CAP will therefore save Iceland between 1.25% and 2.5% of GDP. This is the deadweight loss from an independent Icelandic agricultural policy, on top of EU's agricultural deadweight losses, where estimates vary greatly indeed. Icelandic agricultural policy must, however, be seen in the overall context of EU membership and EU membership has both benefits and costs.

[227] Iceland also contributes to the EU budget and in a way this is just Icelandic money coming back to Iceland.

6 – 7 Concluding Remarks on Agricultural Policies

The CAP has been widely criticized for waste of food, waste of public funds, and for distorting world trade in agricultural products. This issue is very complex. Taking certain aspects out of the context distorts the picture. A simple example of controversy is a statement such as: "importing food creates unemployment amongst farmers", which in itself is correct. A more sophisticated long-term view is that importing food can transfer farmers into more productive jobs, while society would rely on increased and cheaper food imports. In addition, for the globalist, importing food will create job opportunities abroad. Those are decisions politicians and political economists must face, and there are no fully correct answers. Food is different from any other traded goods, because without it people will starve and die[228]. Agricultural support measures are often implemented because unrestrained capitalism, although extremely economically efficient, goes wrong on occasions with production and market failures, e.g. during the Great Depression of the 1930s, or in more recent times the "dot com" bubble of 2000 or the banking and financial crisis of 2008. Compared to the grave consequences of food shortages, 1% of GDP that is currently spent by OECD countries on agricultural support measures is insignificant and is much less than most nations military defence budgets. Nevertheless, there is an economic waste.

Described in more detail in chapter 6, part 5 (Comparison of EU and Icelandic Agricultural Policies), we find similarities between agricultural management in the EU and in Iceland. The agricultural products are not always the same, but the policy structure is based on the same ideas. Both policies support prices higher than world prices, although Iceland has a higher support than the EU[229]. Both agricultural policies are based on the idea of self-sufficiency and are subject to the same criticism of economic deadweight losses for the domestic economy and trade distortions on the world market. Both have had the same development pattern of insufficient domestic food production in the years following World War Two, to overproduction from the 1970s to the

[228] For a part of the World population, e.g. Icelanders who live in arctic climate, housing, heating and clothes are also important in order to survive the winter. Nevertheless, food is different because it is a short-term commodity, but clothes last for years and houses for decades or more.

[229] Iceland's PSE is over 60% and EU's 30-40%. (PSE Producer Support Estimate, definition in Annex 2 on pages 250-251).

present, eventually relying on export subsidies and finally moving to a difficult reform process to try to reduce the overproduction.

The CAP does not fall under the EEA agreement. This means that if Iceland joined the EU, the food and agricultural sector in Iceland will be influenced considerably. Joining the EU would completely open the Icelandic market to the EU CAP.[230] There would be completely free trade of agricultural products from EU countries, which would not only reduce food prices in Iceland, but also push further the ongoing sector and demographic changes where farmers quit their agricultural jobs and change to other professions. Although hard for farmers, this would increase net economic welfare, provided that other more profitable jobs would become available. Since the Icelandic farmer's productivity is well under the average of the society as a whole, it is reasonable to expect that better paid jobs would be available. To move from average to top income is difficult, but to move from low farmer's income to average (median) income is considerably easier. In fact in many industrialised countries this sector and demographic change to fewer farmers has already been ongoing for several years. As we have also mentioned briefly, from a social viewpoint, we are not completely convinced that quality of life for farmers and former farmers will improve by leaving the farming profession, although economically efficient. If a farmer enjoys his or her work, he has no guarantee for that a new career with higher income will bring him a better quality of life. As long as monetary income is above a minimum threshold needed for basic food, clothes and housing, there are other factors than just Euros or Dollars which contribute to quality of life, best shown by the fact that high income families tend to save more than low income families do, simply because they have a surplus of money they don't need for living. However, it is not fair to the taxpayers to regularly subsidize farmers and if farming is not a viable profession in industrialised countries, its economics have to be reconsidered.

Numerous publications criticize the CAP. Many authors suggest that it is unnecessarily wasteful, produces more food than needed, and is too expensive to run. Very few praise its tremendously successful achievement of guaranteed unlimited food supply for every EU citizen, its variety of food, and reasonably affordable (but not lowest possible) prices. This contemporary criticism is because the EU and the CAP were born

[230] We would like to draw attention to the expectations that the World Trade Organisation (WTO) will contribute to increased freedom in trade of agricultural products worldwide in the coming years. Such liberation will influence the EU CAP, the Icelandic agricultural policy, as well as other countries that are members of the WTO.

after the Second World War and their aim was to prevent another disaster of the same scale. So far, it has worked well, but most of the critics are too young to remember the food supply problems of the War and take food for granted. It is clear that importing some kinds of foodstuffs would make them cheaper than by relying on domestic production. But that would mean a higher risk to the supply guarantee. Sometimes it has been suggested that food could be used as a weapon in a war situation or during international tensions. That is correct, but when assessing such threats it is important to have a picture of if there is an enemy at all and if so where the threat would be from. A war between EU member states is practically unthinkable today, although tensions in other parts of the world may be higher. In any case, a risk to the supply chain of imported food to the EU would have to be from third countries. A civil disturbance within the Union in the form of riots or terrorism could also cause problems for the safe and secure food supply. People who are concerned about relying on food imports often forget that without imported oil, large parts of the domestic food production and food distribution would disappear. A most prudent approach requires stockpiles of both food and fuel.

Large-scale famines in the world today are essentially limited to war zones in black Africa. Nevertheless there have been many famines in other parts of the world within living memory. There is always a risk of natural disasters, besides the problems humans can make to nature by accidental pollution or deliberate war-like destruction. For an island like Iceland, a couple of thousands of kilometres from mainland Europe and mainland America, difficulties in transport and food supply can be even more critical than on a mainland with milder climate and easier transport lines. There is no doubt that the Icelandic consumer would be happy to see lower food prices. If joining the EU CAP would help lowering these expenses, in their simplest term it would be acceptable. It might be argued that food supply from Europe under the current geopolitical conditions would be very stable. On the other hand, if mainland Europe got into difficulties in food supplies, then other members such as Iceland would suffer also. An analogue could be drawn with the first oil crisis in 1973. Iceland had for many years bought oil from the Soviet Union. Many Icelanders complained over the low quality of the Soviet produced petrol compared to what Europeans enjoyed from OPEC. However, when the oil supply crisis broke out in 1973, causing several restrictions in oil supply on mainland Europe, Icelanders were most thankful for the steady fuel supply from the Soviets. The theory was that secure low quality supplies were better than nothing. The same could easily be said about food, except that food is a lot more critical than oil. Interestingly, when

the Icelandic banking crisis of 2008 indicated that a national bankruptcy and foreign currency shortages could not be excluded, Icelanders were quickly reassured that in a worst-case scenario they would be self-sufficient in food through domestic agriculture and fisheries.

It is reasonable to expect that Iceland under the CAP would continue to have substantial domestic food production, subsidized by the EU instead of solely by the Icelandic state and consumers. But decisions on prices would be a EU affair instead of a national affair. If within the EU the principle of that every member produces the food they do best, it would mean increased efficiency for EU consumers. That in itself is very positive, but there would have to be a political decision on to what extent food would be imported and what to produce locally.

The main criticism against the current Icelandic agricultural policy is the price level on food (Table 19 on pages 155-156) and level of consumers' and taxpayers' support to producers (Figure 12 on page 125 and Table 20 on page 160). Furthermore, besides tariff barriers on imports to Iceland, veterinary rules have sometimes been a hindrance for importing foreign agricultural products. The EU does the same, just to a lesser extent than the Icelandic authorities. We believe that some protection is prudent, but we do find that the Icelandic protection is high when compared to the EU CAP. There is a deadweight loss and waste in both the CAP and in the Icelandic agricultural policy, although as noted in the part on Global Considerations in Agriculture (chapter 6, part 1), the estimations on how big the losses are vary greatly. Nevertheless, both agricultural policies must be praised for their success in providing a safe and steady food supply. As shown in chapter 6, part 6, if Iceland joined the CAP, food prices would fall, disposable income would increase, the Icelandic GDP would increase, and Icelandic farmers will almost certainly complain over falling revenues caused by lower food prices. Just by participating in the CAP, from a macroeconomic perspective, Iceland would save between 1.25% and 2.5% of GDP, where of 0.75% - 2%[231] would come from cheaper food and an estimated 0.5% from farmers moving to more productive jobs. (See also Table 33 on page 244, showing other economic costs and benefits of EU membership).

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[231] As previously noted, households' savings, as a part of their income, would be double of this amount.

7. Fisheries Policy

This chapter looks at and compares fisheries management in the high seas around Iceland and in European Union (EU) waters. The approach is at the macro level, which includes the objectives (and difficulties) of the government, authorities, and the regulator. Fisheries policy does not fall under the EEA agreement and Icelandic fisheries policy differs from the EU Common Fisheries Policy (CFP). Our methodology focuses on establishing some of the facts about fisheries management in Iceland and in the EU, followed by a discussion of the three main pillars of fisheries management, notably:

a. Ecology and scientific knowledge of the ecosystems of the oceans;

b. Economy and food production;

c. Politics and social needs.

7 – 1 Discussion on Fisheries Management

Fish stocks in the high seas are a natural resource, which is only renewable if it is not overexploited. If too many fish are caught, the fish stocks collapse as not enough fish are left to ensure reproduction. Because what happens in the sea is invisible, the resource is unfortunately often overexploited. During the last half century, fisheries have seen large technological advances and capacity increases, which can destroy the resource if used recklessly. In the same period, the biological knowledge of the ecosystems in the oceans has also increased and the use of the fisheries as a resource has been adapted. Fisheries in the high seas face the same problem as management of a common property resource without a specific owner. The one who grabs the most comes out winning. Fisheries management is a mixture of several disciplines: biology, ecology, economics, sociology and perhaps also political science.

Discussion on fisheries management has evolved considerably over the last half century and we believe that a short historical overview is useful. In 1954 H. Scott Gordon wrote in his groundbreaking article "The Economic Theory of a Common Property Resource: The Fishery", that the bulk of the research on fisheries ("primary production phase of the fishing industry") has been in the field of biology. Even though a lot has been

written on fisheries since then, the largest part seems still to be publications on marine biology. Biologists have ventured into the economic use of the fisheries, and the term "bionomics"[232] seems to describe well some of the current trends in the management discussion. Gordon claimed that words such as "conservation", "overexploitation", and "depletion" are manifestations of the fact that the natural resources of the sea yield no economic rent. Based on the management practices at the time, where greed ruled a common property resource, it was obvious that fisheries would be depleted as a resource if continued unrestricted. Gordon continued by discussing other statements and research such as that management of fisheries are for the benefit of man's economic purposes, not for the fish as such[233]. But he also referred to other statements of the époque that the fish in the sea are unlimited[234]. He continued further and observed the problems we see today, that fishermen are very immobile, live in isolated communities, and have little financial and educational opportunities to move elsewhere. He also noted that when there are natural cyclical fluctuations in fish catches, restrictive measures are applied and biologists think the sea is being depleted, only to change their collective opinion a decade or so later.[235] In the 1950s, fisheries in the high seas where open to everybody. Gordon pointed out that the one who pulled the most out of the sea got the biggest benefit, because the fisheries where global commons. Reducing efforts would be counterproductive because somebody else would take it. Increased catches would be in direct proportion to the effort, causing overfishing and finally no economic rent. In 1955, Anthony Scott in his article "The Fishery: The Objectives of Sole Ownership", continued the discussion on that everybody's property is nobody's property, arguing for a private ownership of the resource, in addition to private ownership of the fishing vessels. Although these two papers written by H. Scott Gordon and Anthony Scott are half a century old, we find them highly relevant to today's problems since what their theory said has happened in the case of the CFP over the recent years. Common property and greed rules who gets the most, although in today's CFP it is not the greed of the various

[232] Used by Russian marine biologist T. I. Baranoff (bio-economics).
[233] Gordon (1954) quoting Martin D. Burkenroad.
[234] Harden F. Taylor in 1951. Nobody would say today, fifty years later, that wild fish are unlimited.
[235] We believe that there are still cyclical fluctuations, but the bottoms and tops of every cycle become smaller because of the large quantities of fish removed by man.

fisheries companies as such, but the fisheries ministers representing their constituency.

In 1969, when there was still in principle free fishing access to the high seas, Vernon L. Smith in "On Models of Commercial Fishing" wrote that commercial fishing has three key economic and technological features: (1) although fisheries are conceivably exhaustible, they are replenishable, (2) that the fishing stock growth or decline is a function of how much is harvested, (3) there are various possible external effects, such as stock externalities where the cost decreases with larger fish populations, fishing net mesh size, and crowding externalities where fishing vessels cause congestion on a common property resource. Smith claims that a sole owner of a resource will not deplete it but utilize it for maximum sustainable yield. In contrast, competition under free entry would absorb the benefits of the resource by higher costs. He states that reduction in fish population increases operating costs. Costs are a function of the effort, the yield is a function of the effort and the gross revenue is a function of the yield. At a certain point the yield or revenue will start to decrease, despite increased efforts. However, Fullenbaum et al. in 1972 disagree with Smith and claim that the traditional theory of a firm integrated into a model of fisheries exploitation remains an unfinished task. In any case, we observe that political developments in the 1970s made the discussion about utilizing unlimited and free access to the high sees for commercial fishing irrelevant. We find that it is not possible to throw away completely the economic theory of a firm under free competition when discussing fisheries. But it needs amendments, because of restrictions on access to the resource since the 1970s and onwards. This is best shown in a certain over-capitalisation in the fishing fleets, where the capacity exceeds the allowed catches.

During the 1970s most states extended their exclusive economic zones to 200 nautical miles (almost 400 km). Consequently, the discussion on free access to fisheries ceased and states began to control the resource much tighter than earlier. Large parts of the fishing grounds were not open any more without restrictions. At this point, coastal states became virtual owners of large portions of the fisheries resource through their newly acquired extended exclusive economic zones. The change is that from now on fish stocks are heavily managed by government regulators, compared to earlier times when it was a question of who grabbed the most, fastest, and most efficiently. Karpoff (1987) published his article, "Suboptimal Control in Common Resource Management: The Case of the Fishery" and described how economists continue to be actively concerned about forming policies to manage a common resource

stock. Karpoff discussed the "biological bias" in fisheries management, claiming that most government fisheries managers are trained in biology and therefore focus too narrowly on stock preservation without regard to economic costs and benefits. He suggested that fisheries regulations would get better once fisheries managers learn some economics. However, Karpoff stated that the biological bias theory does not explain why fishermen would favour traditional regulations (gear and vessel restrictions) rather than a limited entry or quota system under grandfathered rights. We should note, however, that today most regulated fisheries have both gear and quota restrictions. Karpoff also put the harvest function (fish stock in the previous period, its growth function and the catch rate), the effort function, and the cost function into a fisheries model (each vessel as an individual without a perceived effect on the average return, although the aggregate return will be at a diminishing rate). Although Karpoff's 20-year-old fisheries model has a lower emphasis on biology than more modern fisheries models, his theory is still relevant considering that many fishing fleets are too big and powerful for the available fish stocks. Both the EU and Iceland have found themselves with overcapacity on a global scale. The industry had to adapt, as individual firms would like to behave differently than the group has to do under the regulator's restrictions. These management issues are not only relevant for government regulators but also for individual firms and vessels.

But the issue of fisheries management goes beyond biology (protecting the planet) and economics (maximum yield). There is also a social factor and in 1989 Anthony T. Charles wrote his article on "Bio-Socio-Economic Fishery models: Labour Dynamics and Multi-Objective Management". Charles observed that while population dynamics of fish stocks have received considerable attention in the ecological literature, the dynamics of human communities depending on them are equally important. In order to determine appropriate management policies, joint dynamics of fishermen and fish stocks must be taken into account. The task of fisheries management would then be to balance multiple objectives such as conservation, income generation, employment and community stability. The social factor is highly relevant to our study of the CFP, because one of the objectives is to allow fishermen to catch fish, in other words to serve human communities in a social way.

As time goes by, the facts about the state of fisheries evolve and so does the academic discussion. The discussion becomes more how to prevent the source from disappearing and less how to get maximum economic yield from the source. In 1995 Ralph E. Townsend

(Transferable dynamic stock rights), wrote: "Ex Post analysis of overfished stocks often conclude that fishermen as a group behave as if they are indifferent to the future status of the stock. This seeming focus on the present is a result of short-sighted incentive structures under which fishermen are required to operate." In other words, Townsend finds that the regulator has not been good enough in promoting conservation minded fisheries. Instead of the individually transferable quota (ITQ), he proposes transferable dynamic stock right, where the fishermen would be allocated a certain quantity of fish from a certain year. If that fish would not be caught in the same year, it may be caught later in addition to its growth in the meantime. The principle in Townsend's idea is good because it promotes conservation of fish stocks, although we believe that it might be technically difficult and risky. It appears that we would be reaching the limits on biological knowledge on growth of fish stocks. Fish stocks do not grow without limits in a linear function and the optimum harvesting time would have to be determined by biologists rather than by the fishermen. If a fish stock diminishes because of unforeseen natural reasons beyond fishermen's control, the fisherman who waited to harvest his fish would lose both parts of his stock and projected growth.

Flaaten et al. (1998) claim that fisheries management has generally suffered from lack of explicitly stated management objectives and that may have contributed to overexploitation by putting more emphasis on short-term losses rather than long-term gains from reducing fishing efforts. They claim that uncertainties are often not properly measured, and usually not explicitly accounted for in yield predictions, which results in management strategies with substantial risk of stock depletion. According to Flaaten et al. uncertainties in fisheries arise in three principal forms: (1) random fluctuations, (2) uncertainties in estimating parameters and state of nature, (3) structural uncertainty that reflects a basic lack of knowledge about the nature of the fisheries system. In a sub-chapter on management objectives, Flaaten et al. find that management objectives are often vaguely formulated and at times even self contradictory. They also find that the solution to some of the management problems are not hampered by lack of knowledge, but by conflicting interests among various user groups. Flaaten et al. conclude with: "World wide, examples of overexploitation are numerous. Overcapitalisation, international disputes on allocation of catches, and disagreement on the principles of management have resulted in failure to act on scientific management advice. There are also numerous examples of fish stock predictions which in retrospect have been proven to be in large error or where serious prediction problems are presently

experienced, impeding reliable scientific advice on optimal utilization of the resources." Flaaten et al. mention facts about the state of the fisheries and correctly mention also the problems in assessing fish stocks to be able to make future forecasts.

Arnason et al. (2000) start off by mentioning that fisheries management stems fundamentally from the fact that fish resources are common property, and both theory and experience show that common property resources will be overexploited and possibly irreversibly depleted. They find that fisheries management essentially comprises: (1) research (biological and economic); (2) formulation, dissemination and implementation of management policy and rules; and (3) enforcement of the management rules. They also note that there is a large difference in the management costs as a part of gross value of fish landings (Iceland 3%, Norway about 10%, and Newfoundland 15-25%), although as a part of the countries' GDP it is a small expense. They assume considerable economic rent from the Icelandic fisheries, but also see little or no economic rent from the Norwegian and Newfoundland fisheries, despite their higher management expenses. From a national macroeconomic perspective, management costs are issue that influences if the fisheries are a viable economic activity or just a social policy to keep fishermen employed. If management costs cannot be recuperated from the industry but have to be supported by the taxpayer, the industry will act differently than if it were the firms' own direct expenses. We agree with what Arnason et al. say, which is if fisheries are only a small portion of the GDP and the management costs are only a small part of this part, nobody really cares about those costs. We should add that this appears to be the case in the EU where fisheries represent only ¼ of a percentage point of the Union's GDP.

In retrospect it is easy to be wise. Boude et al. (2001) wrote that one of the main areas of the CFP is resource conservation, and discuss the three paradigms of conservation, rationalisation and social community. They correctly state that in practice there is a significant difference between the opinions of the biologists and the measures that are adopted. They blame this on the managers of the CFP, but accept that the financial situation of the fishermen would not enable them to support the losses that would result from drastically reduced catch quotas. In fact the scientists' proposals on Total Allowable Catches (TAC) are not followed by the Council of Ministers. Consequently, the conservation paradigm in the CFP is influenced by other factors. Boude et al. say that for economists the main objective is to achieve economic efficiency and to maximise the rent. However, because of the common property nature of fisheries and

congestion, individual interests do not correspond to the collective interests. By the late 1980s a situation of overinvestment had emerged along with other problems. Boude et al. find that in the field of efficacy, the rationalisation of the CFP is not evident. However, in the field of social community, it appears that the CFP has been very flexible to accommodate fishermen, despite it being very vaguely formulated. Control effort is based more on social peace considerations than conservation policy efficiency. Boude et al. find that in fact the unwritten objective of the CFP is to conserve social peace amongst fishermen. They explain that ministers constantly give in to fishermen's demands to catch more than marine scientist recommend and the goal to preserve the resource is not evident in the CFP.

Foss et al. (2003) discuss several aspects of the differences between the CFP and Norwegian and Icelandic fisheries policies. They speculate if CFP reforms will eventually lead to that the gap in differences will be bridged if Norway and Iceland joined together in negotiations with the EU. Since fisheries management in Norway and Iceland is not the same, Foss et al. often list matters of concern for Norway and Iceland as separate issues. They give recommendations on the various issues, thereby going beyond an academic discussion and provide political guidelines. We see it as a possible political problem that Norwegian and Icelandic fisheries interests are not always the same, meaning that joint negotiations with a harmonised viewpoint vis-à-vis the EU would possibly be difficult.

Discussion on management of fisheries is incomplete without a few words on environmental economics. Literature on environmental economics highlights that the environment is having an increasing role in contemporary political and economic thinking. Cottrell (1978) wrote a booklet on environmental economics with a heavy emphasis on the environmental part. With the rapid population growth, and perhaps up to a certain degree changes in climate and the environment, not all the resources he mentions are free any more. Examples are salt-water fishing, which is not considered abundant and free any longer, increased restrictions on air pollution, which in fact also costs money, and increased expenses in obtaining pure water in many regions of the world. But the number of people in the world has also almost doubled since his writing. Logically he discusses energy, minerals and pollution, but he also discusses food. Here he draws attention to the fact that arable land in the world is limited, and although there is still enough, many countries have very limited agricultural land relative to their population. Advanced agricultural systems can drastically boost production per hectare and

agricultural land is only "a consumable" if it is unintelligently used, leading to soil erosion. If properly treated, its quality can even improve, which in our opinion applies to fish stocks as well. Cottrell draws attention to that humans need to change more from a "cowboy economy" with reckless exploitation, to a "spaceship economy" where there is conservation, maintenance and reuse of materials.

Turner et al. (1994) draw attention to the key difference between non-renewable (exhaustible) resources and renewable ones. Just as Cottrell (1978), they use the expression "cowboy economy" and "spaceship earth". Turner et al. draw attention to the definition, taken from the World Commission on Environment and Development, that "sustainable development is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs". Turner et al. highlight the differences between State Property, Private Property, Common Property and Open Access with no defined owner, and how this may influence management of a resource. It ought to be mentioned here that Hanley et al. (2001) in their book also clearly reflect the trend towards increased emphasis on the environment and on sustainable environment. They analyse trading environmental permits and explain to some length economic impact of environmental policies. We believe that sustainability is a major factor when discussing the economics of fisheries in the high seas and catch quotas are nothing but an environmental permit. Like others have done before him, Rotillon (2005) in his discussion on the economy of natural resources draws attention to the difference between renewable and exhaustible natural resources and that the management approach is not the same. Rotillon mentions the option of a centralised management and regulator, and notes that in a national system management is considerably easier than in a multinational system where measures have to be negotiated. We like to draw attention to how Rotillon's remark is clearly shown in the differences in fisheries management in Iceland and in the EU where the EU member states cannot agree amongst themselves on a sustainable fisheries policy. By studying contemporary political discussion, we have the impression that many environmentalists are more indifferent about fisheries than land and air problems since what is at the bottom of the sea is hidden from the human eye.

7 – 2 European Union's Common Fisheries Policy (CFP)

Fishing still remains essential to many local economies in the EU, although its overall contribution to the economies of EU member states is modest, not exceeding 1% in any member state, and 0.25 % for the EU GDP as a whole. However, many local communities, where there are often few alternatives[236], depend on the earnings of EU's approximately 250 000 full or part-time fishermen. Furthermore, service and support industries such as boatyards, equipment suppliers and fish processors also employ another several hundred thousand people. Table 27 (below and on next page) shows the current employment in the EU fishing sector and Figure 18 on next page shows the distribution of EU's fishermen before the 2004/2007 enlargements. It is interesting to note that the numbers employed in the sector varies drastically and ranges from 350 in Slovenia to well over 50 000 in Spain.

Table 27. Total employment in the EU fishing sector [237]

	1998	1999	2000	2001	2002	2003	2004
Austria	2300	2300	2300	2300	2350	2350	:
Belgium	564	714	691	710	720	962	880
Czech Republic	2100	1992	1944	1842	2167	2154	:
Cyprus	1361	1386	1351	1281	1139	1114	1123
Denmark	6999	6711	5436	5382	5112	4490	:
Germany	4335	4363	4358	:	:	:	:
Estonia	10068	:	9710	6437	7352	7954	:
Finland	5928	5718	5711	5660	5562	4912	4762
France	19689	19479	19080	42954	40530	18691	18415
Greece	18007	19620	19847	20049	19879	18885	:
Ireland	8478	:	:	:	:	:	:

Table continued on next page

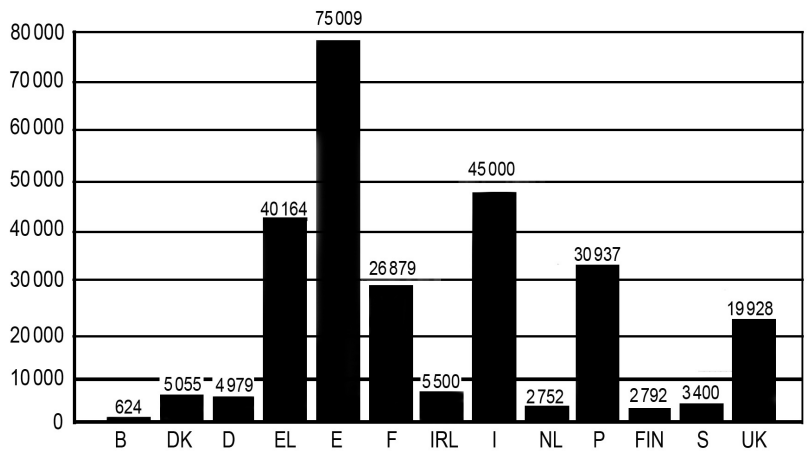
[236] Note Gordon's (1954) discussion on the immobility of fishermen.

[237] We would like to urge some caution in assessing these figures as reporting methods can vary somewhat, e.g. France reported aquaculture separately in 2001 and 2002 but did not report on aquaculture the other years listed.

Table continued from previous page.							
	1998	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Italy	:	:	48770	42137	:	:	:
Latvia	:	6578	6571	6195	6145	6378	4115
Lithuania	:	:	:	3030	:	:	:
Hungary	4600	4660	4900	:	:	:	:
Malta	2120	2060	2077	:	2552	:	:
Netherlands	3743	:	:	3435	:	:	:
Poland	8640	:	:	6300	:	:	:
Portugal	27197	26660	25021	23580	22025	20457	21345
Slovakia	:	:	215	244	:	:	:
Slovenia	187	208	231	311	336	341	352
Spain	:	:	:	64900	55800	:	:
Sweden	:	2880	2782	2791	2231	2066	1913
United Kingdom	17889	15961	14894	14645	12746	11774	11720

Source: European Commission 2005. The blank spaces mean that data has not been reported.

Figure 18. Distribution of the directly employed 263 000 fishermen in the EU before the 2004/2007 enlargements.
(In addition there were also approximately 50 000 part time jobs. This Figure complements Table 27, on the previous page and above, as it is not complete due to lack of member states reporting).

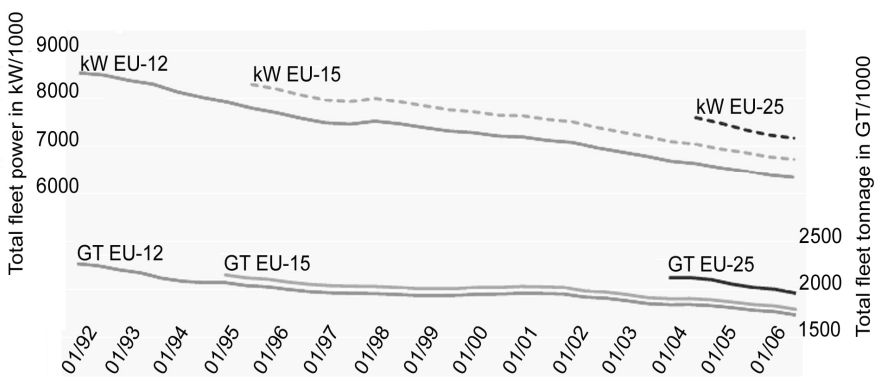


Source: 1995 OECD data published by the EC in 2001.

Aquaculture (fish farming) is a growing sector and provides also several thousand full and part-time jobs, mostly in coastal and rural areas. Aquaculture produces around 1 million tons of fish per year, valued at almost 2 billion[238] Euros. The EU employment in aquaculture is shown in Annex 3 on pages 252-253.

The fishing industry helps to supply fish products to the EU market, which is one of the biggest in the world. With a production of approximately 6 million tons of fish from fisheries and aquaculture, the EU is the world's second largest fishing power after China.[239] Yet, while between 1 and 2 million tons of fish products are exported, 4 to 5 million tons are imported to meet the needs of the Union. This imbalance between imports and exports results in a yearly deficit in the vicinity of 10 billion Euros. The EU fishing fleet capacity has declined over the past few years, shown in Figure 19 below, as it was too large for the fish available and had become uneconomic. The fleet today comprises almost 90 000 vessels, which vary greatly in size, fishing capacity, and catching power, from small boats to huge trawlers (distribution shown in Table 28 on next page). It is interesting to note that within the EU there are large differences in fleet size. The Mediterranean has almost half of the fishermen as well as fleet measured in number of vessels. However, their catches are only about 15 % of the EU total fish production.

Figure 19. Reductions in EU fishing fleet capacity from 1992 to 2006



Source: European Commission: Facts and figures on the CFP (2008)

[238] Billion meaning thousand millions (1 000 000 000).

[239] For comparison, Iceland is the world's 12th largest fish producer in terms of catch volumes.

Table 28. The EU fishing fleet in 2005

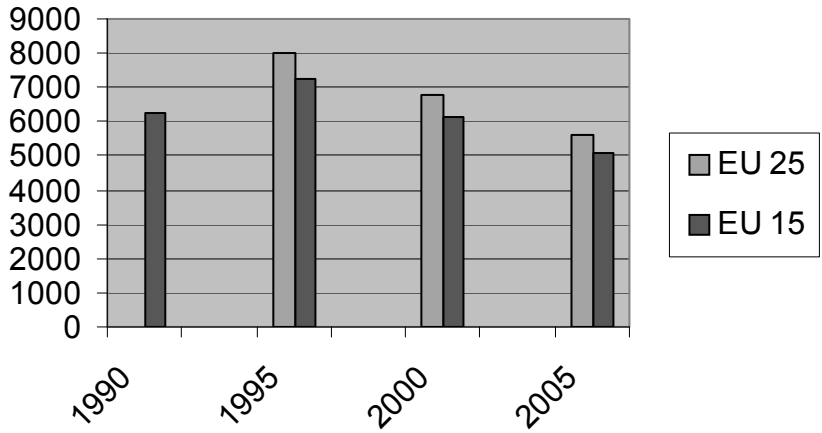
	Number of vessels	Tonnage	Engine power (KW)
Belgium	121	22 694	65 643
Cyprus	889	9 174	47 635
Denmark	3 281	92 826	327 737
Estonia	1 044	24 254	62 001
Finland	3 291	17 009	172 244
France	7 853	215 706	1 069 396
Germany	2 131	64 117	159 780
Greece	18 334	93 141	540 997
Italy	14 504	213 260	1 228 196
Ireland	1 400	90 112	222 222
Latvia	928	38 580	66 209
Lithuania	270	64 390	70 572
Malta	1 426	18 966	102 264
The Netherlands	840	175 439	414 258
Poland	983	30 613	106 602
Portugal	9 998	110 696	387 597
Slovenia	150	865	8 768
Spain	13 714	488 304	1 127 497
Sweden	1 634	44 795	221 274
United Kingdom	6 875	219 448	886 331
EU	89 666	2 034 389	7 287 223

Source: European Commission (2006)

The detailed distribution of the actual fish catches are shown in chapter 7, part 5, on the economic aspects of fisheries (page 227, Table 31), which indeed ranges from zero (Luxembourg[240]) to almost a million tonnes in Spain and Denmark (and EFTA-EEA members Iceland and Norway with even more). Figure 20 (on next page) indicates how EU catches have been diminishing over the last decade.

[240] Luxembourg is landlocked (no fishing fleet) and has no aquaculture either.

Figure 20. Total EU fish catches from 1990 to 2005 (in thousands of tonnes).



Source: Eurostat 2007.

EU's Common Fisheries Policy (CFP) began to take shape in the 1970s when coastal states, driven by evidence of dwindling fish stocks, extended their fishing zones under international law to 200 nautical miles (over 370 km from the coast). The EU member states decided that the European Community, as it was at that time, was the best instrument to defend their collective interests in international negotiations and to manage their fish stocks. The CFP is based on the principle that access to coastal waters within a 12 nautical mile band is usually reserved for fishermen from local ports, but outside this line there is generally free access for all Community fishermen. However, a fishing license is needed and there is a Total Allowable Catch (TAC) in addition to a variety of technical measures, such as closed areas and seasons, mesh size of fishing nets and a minimum size or weight of fish landed, which is all intended to protect and preserve fish stocks.

The concept of TAC is a key element in the management of fishing exploitation. Stock levels are annually assessed by scientific organizations. At the end of each year, TACs are fixed by the Council of Ministers for certain important species to EU fleets in given maritime areas. Each TAC is divided up among the member states in the form of quotas. They, in turn, allocate them nationally or exchange them with other member states. When a TAC is exhausted the fisheries have to stop. (EC 1999). However, the EU CFP TACs are not based exclusively on

biologic-scientific recommendations, but rely much on social, economic and political considerations (Boude et al. 2001).

The fisheries can only prosper if there is sufficient fish to catch. As noted by the European Commission (EC 1999), the key challenge facing the CFP over the past two decades has been the need to reconcile the demands of fishermen to maintain their livelihoods with diminishing fish stocks. The EU fishing industry has been in a constant state of crisis for some years, caused by too large a fleet, overfishing of stocks, debts and marketing problems. The EU's instruments for dealing with the structural problems are/were:

(1) The Multiannual Guidance Programs (MAGPs) in use until 2002, which aimed at restructuring and modernizing fishing fleets. The programs fixed ceilings for fishing effort by the main segments of the fleet, i.e. trawlers and netters, and aimed at a reduction in ship tonnage and power.

MAGP I, 1983-1986 aimed at preventing increase in fleet capacity,
MAGP II, 1987-1991 aimed at a modest reduction,
MAGP III, 1992-1996 aimed at cutting fishing effort,[241]
MAGP IV, 1997-2001 finally cut fishing effort by 30% on fish stocks in danger of collapse and 20% on overfished stocks (EC 2001);

(2) The Financial Instrument for Fisheries Guidance (FIFG), which was created in 1993 and replaced in 2007 by the European Fisheries Fund (EFF). The EFF is currently planned until 2013, with a total seven-year budget of 3.8 billion Euros distributed between 26 member states (Luxembourg does not participate). The EFF is intended to support sustainable exploitation of the fisheries resources and to promote a stable balance between the fisheries resources and the capacity of the fishing fleet; to strengthen the competitiveness and the viability of operators in the sector; to promote environmentally friendly fishing and production methods; to provide adequate support to people employed in the sector; and to foster sustainable development of fisheries areas.

(3) Socio-economic measures for areas depending on fishing that can benefit from aid from the European Regional Development Fund and the European Social Fund.

Another key aspect of the CFP is the common organization of the market. First introduced in 1970 and then reviewed in 1993, these are measures designed to stabilize the market, guarantee a steady supply of quality products, ensure reasonable prices for consumers and support

[241] Ministers only agreed to cut fishing efforts less than the Commission proposed.

fishermen's' incomes. The key elements of the market organization are (EC 1999):

* Quality standards covering size, weight, presentation, packaging and labelling;
* A comprehensive pricing system which allows prices to be fixed by supply and demand but which sets a floor price at which fish are withdrawn from the market and not sold. In most years, the total quantities are quite small - less than 50 000 tons;
* Producers' organizations to which most fishermen belong which market the fish, help to improve quality levels, adjust supply to demand and make sure that fishing quotas are properly managed;
* Imports without which the Union could not satisfy domestic demand for fish. After fruit and vegetables, fish is the Union's second largest food import. Prices are monitored by the Commission, which intervenes whenever imports undermine the market.

The EU, being an economic and political giant, has also made fishing arrangements with third countries, providing access for the Union's fleet to the waters of non-member countries. Without such arrangements the general extension of fishing zones to 200 nautical miles and the resulting substantial reduction in fishing opportunities would have resulted in serious repercussions for the Community fishermen. In plain language this means that prior to the generally accepted 200 nautical mile exclusive economic zone of coastal states in the 1970s, many Community fishermen based their livelihood on catching what had now become other nations' fish. Large parts of the common high seas with no owner suddenly became states' "private property". The EU has concluded fisheries agreements with over 25 non-European states around the world. Different categories of fisheries agreements exist, which are distinguished according to the type of concession offered:

- Reciprocal arrangements,
- Access to surplus stocks,
- Access to stocks in return for market access,
- Access to stocks in return for financial compensation,
- Access to stocks in return for payment and market access.

The EU also participates in the work of various international fisheries organizations like the North-West Atlantic Fisheries Organization, the International Baltic Sea Fishery Commission, the North Atlantic Salmon Conservation Organization, the Food and Agriculture Organization and the United Nations Organisation. More than 25% of all fish taken by EU boats for human consumption is taken from international waters or those controlled by non-EU members.

By the late 1980s a situation of overinvestment, overexploitation and smaller landings had emerged. Over ten years ago, (MAGP III in 1992) when the European Commission proposed reductions in fish catches based on scientific advice, the Council of Ministers only adopted parts of those proposed reductions. In retrospect, as will be discussed later, it appears that the fisheries ministers were more concerned about the contemporary economic health of their voters, having minimal regard to the long-term effects and what might happen after their time in power. Townsend (1995) blames this disregard of the future on the fishermen themselves and on the regulator's incentive structures. Fish stocks are like capital. It yields interest, but when more is consumed, the capital stock goes down, and so does the interest in the future. As reported by the EC Directorate General (DG) for Fisheries, (EC 1999), the European Union must in the next few years rise to the challenge of establishing and maintaining a sustainable and economically viable equilibrium between the conservation of resources and their exploitation. With drastically reduced fish catches, re-thinking the CFP has now become unavoidable. The European Commission has adopted a Green Paper on the future of the CFP. According to then Commissioner Franz Fischler in charge of Agriculture, Rural Development and Fisheries, (interview in Morgunbladid, 13 May 2001), "the CFP needs urgent change because many of the most important fish stocks are on the verge of collapse. We are catching too much fish too young, which is seriously hindering the renewal of fish stocks. Decisive action is required to ensure the sustainability of the fisheries sector".

The Green Paper (2001) presents a bleak picture of the situation of European fisheries today. Many of the most valuable fish stocks in Community waters are overfished and, as a result, are currently outside safe biological limits. The quantity of adult demersal (bottom-dwelling) fish in EU waters was about 90% larger in the early 1970s than in the late 1990s. This is due to too much fishing by a fleet that is too large for the quantity of fish that should be caught and conservation measures that have not been effective or selective enough to protect fish stocks and marine ecosystems. The evolutions of selected fish stocks in EU waters are shown in Annex 4 on pages 254-255. (For comparison, Annex 5 on pages 256-257 shows the evolution of selected fish stocks in Icelandic waters). Shrinking economic returns tend to encourage people to put more effort into their fishing, often by investing more in better fishing technology, thus compounding the vulnerability of the stocks and of marine ecosystems as well as undermining the economic situation of the industry itself. Thus, according to the Green Paper (2001), between 1990 and

1997, employment went down by 19% in the catching sector and 10% in processing sector. The message was clear. Unless fishing is reduced in EU waters, the sustainability of many fish stocks is threatened. Since then, every year in December when the EU fisheries ministers have met, they have adopted a reduction in TACs, but not as much as the Commission and the scientists advised.

Greenland's experience of the CFP is an interesting case. When Denmark joined the EU in 1973, Greenland, as a Danish territory, automatically became a member of the Union and of the CFP. However, Greenland left the Union in 1985 after holding a national referendum on continued membership.[242] Greenland's reason for leaving the EU was a dispute with the EU over fisheries rights, as the EU CFP at the time was based on equal and unrestricted access for all EU fishermen outside the 12 nautical mile zone. This was unacceptable to the Greenlanders, as foreign trawlers would swamp their fertile fishing grounds. It should be recalled that in the years following the universal 200 nautical mile exclusive economic zones, many EU fishermen found themselves without fishing rights in far-away waters, including what had now become Greenland's exclusive economic zone. After Greenland left the EU, the EU concluded fisheries agreements with Greenland (fisheries partnership agreements). The current agreement covers the period 2007 to 2012, where the EU pays Greenland 15.8 million Euros for fishing rights, including a financial reserve of 1.5 million Euros for additional capelin and/or cod quotas and 3.2 million Euros for defining and implementing a fisheries policy in Greenland. This fisheries agreement allows EU vessels to fish in Greenland's waters with a yearly catch quota of approximately 90 thousand tons. The vessel owners are furthermore expected to pay up to 2 million Euros to Greenland in fishing license fees. The users of these quotas are mainly British, Danish, German, Portuguese and Spanish fishermen. The agreement includes a clause stating, "The quotas may be increased if scientific advice allows". As we shall mention later, a clause on scientific advise will be important for Iceland to keep in mind in future fisheries negotiations with the EU. Since Greenland's decision to leave the EU in 1985, the CFP has evolved with limitations on catches, gear and vessel restrictions, but only after many fish stocks had been drastically

[242] Greenland is a Danish territory with self-governance for home affairs. Greenland, however, keeps its status as a Danish overseas territory and therefore keeps some links to the EU in a similar manner as British and French overseas territories.

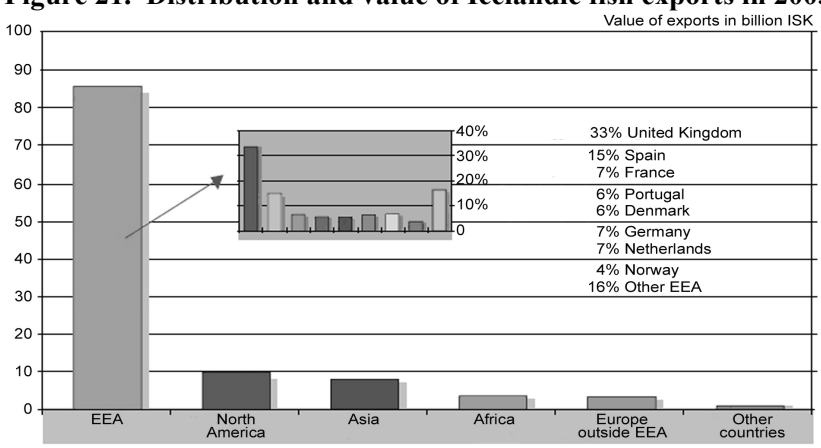
reduced. However, Greenland has not returned to the EU, although it cannot be ruled out at some future date.

7 – 3 Icelandic Fisheries Policy

Fisheries have been important to Iceland ever since the country was settled in the ninth and tenth centuries. The waters around Iceland are fed by the warm Gulf Stream from the south, which offer good conditions for fish stocks to thrive. As stated by Palsson, (Minister of Fisheries) (1998), understandings of the marine ecosystem are the foundations of sensible and sustainable harvesting of the fisheries resource. Iceland has assigned a key role to marine research, which is the basis for effective fisheries management and its implementation. The system that has been developed in Iceland today aims to harvest fish stocks in a responsible manner in order to ensure and maintain maximum long-term productivity of all marine resources.

Fishing and fish industry provide close to 6% of the total GDP, down from 10-12% a decade ago. This percentage reduction is more because of an increase in other sectors, than reduction in fisheries per se. Given the catch quotas, which are aimed at sustainable yield, there is no room to increase the catches and the size of the industry. Fisheries provide about half of Iceland's revenues from goods exported and yield approximately 1/3 of all national foreign currency earnings. Foreign currency earnings are critical in a small and non-diversified import-export dependent economy like the Icelandic. Over 2/3 of the fish exported from Iceland goes to the EU and Icelandic fish exports represent about 5% of the world's total fish exports. Figure 21 (below) shows the distribution and value of Icelandic fish exports in 2005, measured in monetary units rather than in tonnes.

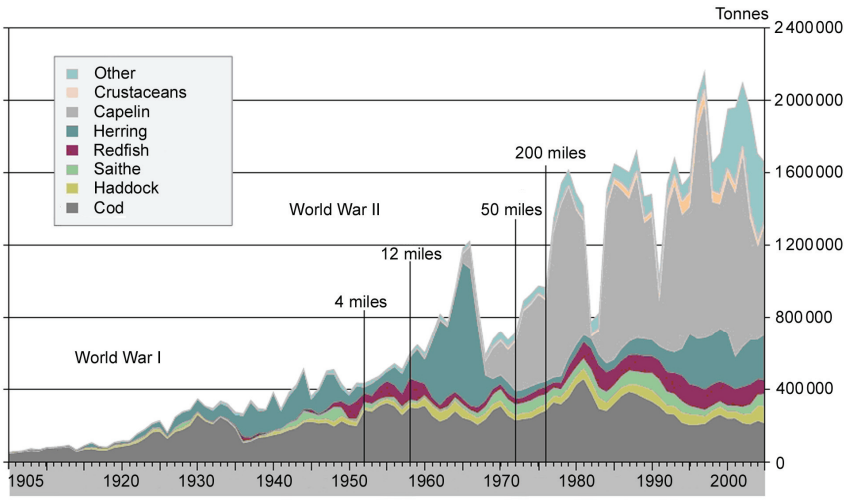
Figure 21. Distribution and value of Icelandic fish exports in 2005



Primary source: Statistics Iceland. Published in Icelandic fisheries in figures (2006).

In 1995 Iceland exported marine products valued at 90 billion Icelandic Kronas, or 1.3 billion USD, from a total catch of well over one million tons. The 2003 figure was close to 1.8 billion USD for a total catch of almost 2 million tons. However, annual catches in recent years have averaged around 1.5 million tons and the quantity depends very much on catches of pelagic species, especially capelin, which have fluctuated widely from year to year. As an example, the total catches in 2006 were down to 1.3 million tons. In terms of total catch, Iceland ranks 12th among the world's leading fishing nations (2005 data), although few, if any, others are so overwhelmingly dependent on fisheries. Figure 22 (below) shows the evolution of total catches in Icelandic waters over the last 100 years.

Figure 22. Total catches in Icelandic waters 1905 to 2005



Source: Ministry of Fisheries, Iceland (2006).
(For comparison, the EU total catches are about 5 times larger).

In 1995, 15 000 people in Iceland, (about 11% of the total domestic workforce at the time), worked directly in fishing or fish processing, whereof 6000 were actual fishermen and 9000 worked in the processing industry. In the last few years the trend of total number of persons employed in fisheries has been downwards. In 2005 there were around 5000 actual fishermen and 4000 additional workers in the fish processing industry. The reduction of personnel employed in the processing industry is mainly due to automation and on-board processing

in some vessels.[243] Activity within fisheries extends far into other sectors of the Icelandic economy. Many more work in related services or sales and marketing of products. Various kinds of other industry are connected more or less to the exploitation of marine resources. Shipbuilding, repair, and maintenance of vessels is an important service sector, while rapid technological development and progress in all areas of fisheries have spawned a flourishing secondary industry which specialises in the design and manufacture of fishing gear and processing equipment. This sector is the one of the main growth areas among Iceland's manufacturing industries today. (Ministry of Fisheries, 1998 and 2005).

Looking back at historic developments in fisheries management, Iceland first officially declared a fishing limit in the year 1901 with an exclusive zone of three nautical miles, which remained in effect until 1952. During the decades that followed, Iceland campaigned to win full jurisdiction over the fishing grounds around the island. Without jurisdiction, fisheries management and prevention of overfishing is impossible. Known as the "Cod Wars," this campaign saw the fishing limit extended in four stages to reach its present 200 nautical miles in 1975, giving Iceland an exclusive economic zone covering a total area of 758 000 square kilometres, more than seven times larger than the country itself. Since then, other coastal states have followed, and 200 nautical miles are the normal exclusive economic zones in the world today. The open access and common property resource had become state property with restricted access.[244]

As pointed out by Gylfason and Weitzman (2003), until the mid-1970s, when the Icelandic Marine Research Institute issued its so-called "Black Report" with dire warnings about the impending collapse of the cod stock, Iceland's fish resources had appeared unlimited. The fish stocks were in decline, at least partly due to overfishing, but catches, while volatile, remained high by historical standards. The "Black Report" made clear that somehow the fisheries would have to be limited and the

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[243] Automation in factories is a worldwide trend, replacing humans with machines and robots.

[244] Interestingly, with increased technology to exploit the deep oceans floors for oil and minerals, in the first few decades of the 21st century the World community will have to decide on who owns the sea and the seabed beyond the 200 nautical mile limit. This part of the planet could become a World common property with a United Nations administration, the property of the first one to acquire it like the contested Russian flag at the seabed on the North Pole, or coastal states could draw a middle line or extend the 200 nautical mile line depending on the depth of the sea and the extension of their continental shelves.

successful expulsion of foreign fishing vessels from Icelandic waters and the subsequent extension of Iceland's fisheries jurisdiction only provided a brief respite. Shortly thereafter it became evident that sooner rather than later, free and unlimited access for all Icelandic fishermen would jeopardize or even deplete the fisheries resource.

At first the authorities attempted to apply fishing effort limitations, which primarily focused on limiting the number of vessels and fishing days. These measures did not achieve the protection objectives they were intended to secure and also led to inefficiency of effort and overinvestment. Total Allowable Catches (TACs) have therefore been implemented, based on scientific advice. Over the last decade the Icelandic TACs have followed scientific advice very closely, although that was not always the case in the past. Under the current law, the Minister of Fisheries sets the TAC for the main species for the coming fishing year and the TAC decision is based on recommendations from the Marine Research Institute. These recommendations have been submitted to the Advisory Committee on Fisheries Management of the International Council for the Exploration of the Sea (ICES) for comment. Along with the TAC decision, which is the cornerstone of Iceland's fisheries management, there are a number of other measures aimed at supporting the management system. One is that for every new vessel added to the fishing fleet, vessels adding up to the same numbers of metric tons have to be "retired" and withdrawn from the fishing fleet. Other provisions give the Marine Research Institute the authority to close fishing areas temporarily without prior notice if the proportion of small fish in the catch exceeds certain limits (Ministry of Fisheries, 1998). The evolutions of selected fish stocks in Icelandic waters are shown in Annex 5 on pages 256-257. Although some Icelandic fish stocks have decreased over the last two decades, some are stable or have increased, e.g. the herring stock. For comparison, Annex 4 on pages 254-255 shows the evolution of selected fish stocks in EU waters. The negative evolution in EU waters is more critical, having a limited political will to stop it.

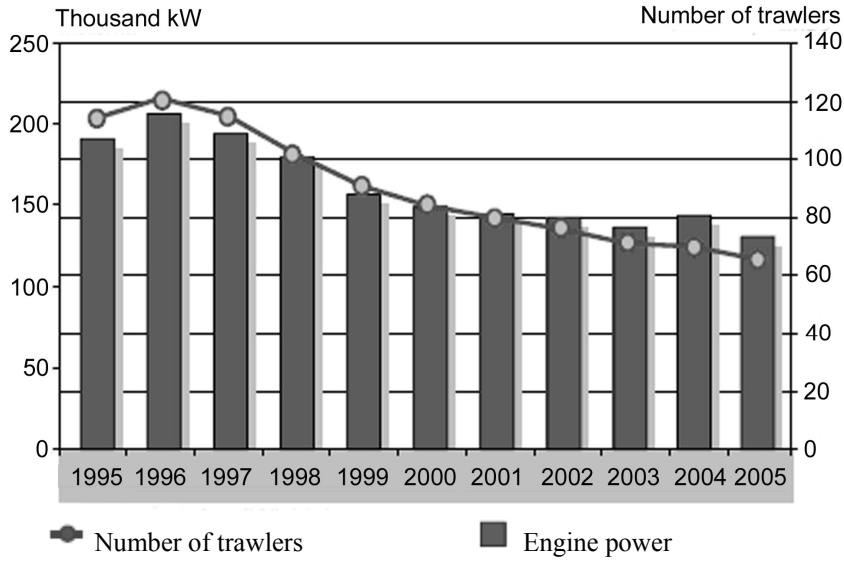
Cod is the most important of the Icelandic commercial fish stocks. After 1990 the annual cod catch had to be reduced year after year, from between 300 000 and 400 000 tons, to less than 170 000 tons. As a result of these reductions, however, the TAC for cod for the 1996/1997 fishing year was increased in expectation that it would not upset the recovery of the stock and further increases were projected. Nevertheless, the TAC set in 2007 drastically cut the cod catch quota as the state of the stock was deemed more critical than previously expected. This cut, based purely on scientific advice, caused some political uproar amongst fishermen, but

was nevertheless deemed necessary bearing in mind the long-term use of the fisheries resource. It appears that the Icelandic cod stock has declined over the last two decades (see e.g. Annex 5 on pages 256-257), in a similar manner as cod stocks in EU waters have declined (see e.g. Annex 4 on pages 254-255).

The Icelandic government had adopted a catch rule for cod, which was based on an annual quota amounting to 25% of the total stock. This catch rule was the result of work by marine biologists and economists formulating the most favourable stock size and speed for rebuilding the cod stock, taking into account interaction with capelin and shrimp stocks, but both cods and humans eat the latter two. At present the size of the cod stock is estimated to be about 600 000 to 700 000 tons and the objective is to let it increase, perhaps up to around 1.5 million tons. As far as the Icelandic herring and capelin stocks are concerned, an informal rule has been followed for a number of years to manage these stocks, but the goal is to develop comparable formal catch rules for these and other species. It is worth noting that deliberate efforts to allow the fish stocks in the ocean to increase is in stark contrast to what has dominated the EU CFP until now, where the stocks are decreasing. Nevertheless, sharp fluctuations in Icelandic catches have dealt heavy blows to both the fisheries industry and the economy as a whole.

The capacity of Iceland's fishing fleet started declining in 1990 after several decades of growth. This trend has continued because of greater priority given to mergers of fishing quota to improve the efficiency of fishing operations, along with vessel retirement. In 1996, a total of 2132 vessels were licensed to fish in Icelandic waters. Of these vessels 1644 were less than 12 gross metric tons. In 2004 only 1614 ships participated in landing catches. The most powerful part of the fleet is about 75 trawlers, of which half process and deep-freeze their catches on board. Trawlers account for around half of the average annual demersal catches. There are also more than 50 vessels specially equipped for the capelin fishery with a capacity of 700 to 1400 tons per trip. Figure 23 on next page shows the evolution of the Icelandic trawler fleet between 1995 and 2005. (Ministry of Fisheries, 1998, 2005 and 2006).

Figure 23. The evolution of the Icelandic trawler fleet between 1995 and 2005

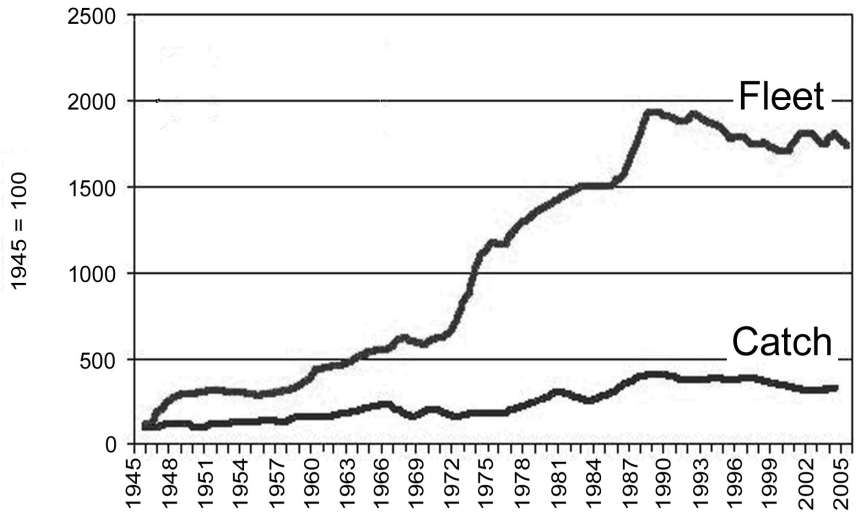


Primary source: Statistics Iceland. Published by Ministry of Fisheries (2006).

Just like in the EU, overinvestment has burdened the Icelandic fisheries. Figure 24 on next page shows the development of the size of the Icelandic fisheries fleet since 1945 seen in relation to total catches. The fleet and catches are measured by value rather than in tonnes.[245] Although the fleet is still too large for the catches, the trend is towards a smaller fleet. The option to increase the catches to better utilize the investments is excluded since increasing the catches will jeopardize the resource.

[245] The fleet size is measured in value until year 2000. As of 2000 the fleet is measured in Tonnes.

Figure 24. The size of the Icelandic fisheries fleet compared to total catches since 1945. [246]



Source: Gylfason, (Kritartaflan, 2008).

It would be logical to expect that the increased investments in the fishing fleet shown in Figure 24 would be a result of mechanisation and thereby reducing manpower, eventually resulting in savings through personnel reductions. This is only partially true and the oldest figures available (Statistics Iceland) show that in the mid 1960s Iceland had about 4500 actual fishermen and the number of fishermen has been on a very slow increase through the last four decades, up to the current figure of around 5000-6000 persons. The figures indicate that over the last 40 years there is increased productivity per employed fisherman, but less than proportional to fleet investments. This was caused by government policy in the 1970s giving too favourable loans to promote investments in increased fishing capacity. Nevertheless, mechanisation and automatic processing has reduced the relative need for personnel.

Fishing and fish processing in Iceland is all done by privately owned companies scattered along the coastline. The quantity exported (e.g. 828 000 tons in 2004[247]) far exceeds domestic consumption and compared to total catches, relatively little fish is imported for processing

[246] Idem.
[247] Statistics Iceland.

facilities (e.g. 200 000 tons in 2004[248]). Most of the Icelandic catches are landed and processed in Iceland, although there are some limited landings by Icelandic vessels abroad. Iceland currently uses a system of Individually Transferable Quota (ITQ). The ITQ structure was intended to increase efficiency. This means that the holder of the rights to catch a certain quantity of fish is not obliged to do it himself, but can sell or lease the rights to the catch to others, who as the new holders of the quota can use it as they see fit. The current Icelandic catch quotas are distributed free of charge, based on past tradition. However, the criticism of the ITQ system is that some companies, which have in the past caught fish, keep on receiving a part of the quota when it is distributed, without using it. Since the right to the catch is valuable, these companies rent or sell their catch quota to others. These rent seeking owners of less active fisheries companies do therefore not fully contribute to the industry per se, but act like they own the wild fish stocks in the sea. As such, rent seekers who in common terms have been referred to as "quota barons" currently burden the industry.[249] The fishing fee used in Iceland since 2004 is based on catches. It is a form of tax on fisheries companies and boat owners for the use of fish stocks as a natural resource. This means that new entrants to the industry must not only pay taxes to the state, but they must also pay the private individual or company who "owns" the quota for the right to catch fish. For comparison, in some EU states there are fishing fees, but

[248] Ibid.

[249] As is the case in other parts of the world where the ITQ system has been used, the de facto owners of the quota have often become wealthy and the quota ownership gathers on a few hands. One remedy is that the quota be sold on a regular auction by the state, rather than given free of charge to some individuals or privately owned companies as if they were virtual owners of the resource. This of course leads directly to the highly controversial and political issue of who owns natural resources. Hannesson (2004) discusses private ownership and points out its many benefits. Indeed a private owner treats his property with more care and respect than the attitude often shown to public or common property. However, in our opinion, freely roaming wild fish stocks are not comparable to aquaculture, cattle, or forests, which are nurtured within confined areas. Although a landowner has a right to use his land, including hunting and other harvesting of nature, extending such rights to the oceans is highly disputed. An analogy can be drawn to e.g. offshore oil wealth, which in many jurisdictions is considered as national or state property, although its use may be leased to private individuals or companies.

the quota per se is not for sale. Nevertheless, new entrants to fisheries in the EU will in many cases have to buy a fishing license.

Sometimes the Icelandic de facto owners of the ITQ, - the "quota barons" - have used the quota as an indirect collateral for business loans not necessarily related to fisheries, leading to a considerable debt.[250] Total invested capital and debts of the Icelandic fisheries industries are shown in Table 29 on next page. This high accumulation of debt does not make fisheries per se any less profitable, but it raises questions about the overall accumulation of debt in the Icelandic financial system with questionable loan guarantees. Theoretically, in case of defaults, the banks will become the de facto owners of the part of the ITQ used as a collateral. This could be considered as a version of the "Dutch Disease" where abundant natural resources push manufacturing and wise investments to the side in the same way as many Arabic states have squandered their oil wealth.

Table 29 printed on next page

[250] The quota itself may not be used as a collateral, but to circumvent the rules, the quota is assigned to a ship of low value. This enhances drastically that ship's value, which in turn makes the ship far more valuable as a collateral than if it were just an old vessel made of wood or iron with no fishing rights.

Table 29. Total invested capital and debt in the Icelandic fisheries industry from 1985 to 2008. (In billions of Kronas)

Year	Invested capital [251]	Debt
1985	30	28
1986	41	37
1987	49	46
1988	63	71
1989	79	88
1990	89 / 90 [252]	87
1991	92	94
1992	95	94
1993	98	102
1994	104	96
1995	104	94
1996	110	116
1997	113	123
1998	115	140
1999	117	160
2000	132	165
2001	132	195
2002	129	192
2003	126	186
2004	125	208
2005	119	245
2006	136 [253]	277
2007	137 [254]	249 [255]
2008 [256]		416 [257]

Sources:
(1) Invested capital: Statistics Iceland (2009).
(2) Debt: Central Bank of Iceland (2009). The debt estimation is based on a collection of inputs from the (former) National Economic Institute and Statistics Iceland. The debt figures should be seen as a guideline and may not be complete.

[251] Of this amount approximately ¾ is fishing and ¼ is fish processing industry.
[252] The database was changed in 1990. 89 billion refers to the post-1990 database and 90 billion to the pre-1990 database.
[253] Preliminary figure.
[254] Idem.
[255] Estimated. The actual debt figure for 2007 could be higher.
[256] In October 2008, at the time of the collapse of the main Icelandic banks.
[257] Estimated. The debt figure for 2008 could be higher. We should draw attention to that this figure corresponds to approximately 1/3 of the Icelandic annual GDP. We should also note that in 2008 the Icelandic Krona lost about half of its value compared to major foreign currencies, leading to foreign currency nominated loans doubling in value measured in Krona.

7 – 4 Ecological and Biological Aspects of Fisheries

The earth's resources fall essentially into two categories: renewable and exhaustible (see e.g. Turner et al. 1994, and Rotillon 2005). The difference is fundamental. Examples of non-renewable resources are minerals, which require man to recycle used things, with all its expenses and complications, and oil and coal, which will burn up. Some resources like hydroelectric energy and wind power are naturally renewable, and still other resources are renewable as long as they are not totally destroyed. Examples of naturally renewable resources that need themselves in order to regenerate are the forests, which require trees to produce seeds in order to replace felled ones, and fisheries in the high seas which require a minimum of fish stocks to ensure reproduction. Concerning fisheries, biological knowledge about marine life is the basis for responsible fisheries management. Without biological knowledge it is impossible to calculate or estimate sustainable exploitation. The purpose of this sub-chapter on ecological and biological aspects of fisheries is to show the difficulty in constructing modern fisheries models. Land based agriculture is much easier to manage than fisheries. For instance, trees are easy to count and measure, but fish stocks are evasive. Despite modern technology, what happens to fish stocks at the depths of the oceans is based on estimates. Often, there are large errors (see e.g. Flaaten et al. 1998) and unscrupulous fishermen and politicians use this to demand increased fish catches. Strip-logging in forests causes uproar amongst environmentalists, but the oceans are just endless water to the human eye. The difficulties in estimating fish stocks are not an excuse, but an important part of the explanation of why overfishing is common.

There is always a problem with global commons without a specific owner (Gordon 1954, Scott 1955, Arnason et al. 2000 and many others). Some individuals will try to exploit them to their maximum for their own benefit before somebody else takes it all. This certainly was the case with fisheries until 200 nautical miles exclusive economic zones became an almost worldwide rule some 25 years ago. Fish stocks are like capital. Well managed capital can provide a handsome interest, but if there is no owner of the capital, the one who grabs the most wins, but at the expense of future generations. If overfishing depletes fish stocks, they will not recover, but collapse and become extinct like so many other species eradicated by man. The same applies if the delicate marine life biological chain is disrupted. The species in the sea live on each other and extensive research is needed to determine how much fisheries the different

species will support without reducing the balance and total quantity of fish. According to the laws of nature, when one species multiplies excessively, food becomes scarcer for them and they die naturally of starvation and diseases. In such a case humans can intervene and in some cases eat what would otherwise be wasted. But fishing methods are also an ecological issue. Trawlers that scrape the bottom are efficient fishing tools, but they can damage the ecosystem at the bottom of the sea and caution is required concerning both the quantity of fish caught and the fishing methods used. Within the scope of this study, it is fair to state that Europeans, both EU and Iceland, are aware of the need to protect the environment, although care amongst fishermen and implementation by the authorities varies.

As noted in the European Commission's Green Paper on the future of the CFP (2001), the development of a fish stock is dependent of four basic biological factors: recruitment, growth, natural mortality and fishing mortality. A fish stock, counted as a number of fish, will increase by the number of incoming recruits, and the stock biomass will increase by the combined effect of numbers of new recruits and the individual growth of all fish in the stock. Stocks will decrease by the quantity that die of natural causes (such as old age, being eaten by other marine animals, or through disease) and by fishing, the latter generally being the main reason for the decrease of most stocks. The net balance between factors that promote the increase of a stock, such as recruitment and growth on the one hand, and factors that cause the stock to decrease, such as natural and fishing mortality on the other hand, will determine the development of the stock over time. If the removal is consistently higher than the recruitment and growth, the stock will decline and vice versa. ICES (International Council for the Exploration of the Seas) provides yearly assessments of these factors, along with assessments of landings for a large number of stocks. There is a clear relationship between spawning stock and recruitment, as large numbers of spawners provide a better chance of good recruitment and good recruitment will boast the spawning stock in subsequent years. Recruitment and spawning stocks are therefore often presented in the same graph in fisheries models. Likewise there is a clear relationship between landings and fishing mortality and these are also often shown in one graph when biological fisheries models are constructed.

* *Recruitment (R)* is the number of new fish produced each year by the mature part of the stock. R is normally assessed as the number of a specific age, normally 1 to 2 years old, being added to the stock at a specific time each year.

* The mature part of the stock is labelled *Spawning Stock Biomass (SSB)*. This is a measure of the cumulative biomass of all fish that will spawn in a given year.
* *Fishing mortality (F)* is an expression of the proportion of the fish stock that is removed by fishing activities within one year.
* *Landings* correspond to ICES's estimate of the most likely removal from the stock. These figures can deviate from the official statistics as the scientists try to correct for misreporting by area and species and in some cases an estimate of the amount of fish discarded (legally or illegally) is included.

As further discussed by the European Commission (Green Paper, 2001), a fairly reliable picture of stock development can be derived from comparing trends over time in recruitment, SSB, landings and fishing mortality. However, the assessment of these factors is subject to considerable uncertainties (Flaaten et al. 1998) as it is dependent on accurate catch statistics, good sampling of catches and results from survey activities (Green Paper, 2001). The largest uncertainties are associated with the most recent estimates of SSB and fishing mortality, but the mid to long-term trends of these factors are more reliable. With the introduction of the precautionary approach (pa) ICES has proposed "reference points" for fishing mortality and spawning stock biomass. The most important reference points are those that are associated with recruitment failure or stock collapse. These reference points are labelled biomass limit (Blim) and fishing mortality limit (Flim). The Blim defines a SSB level where recruitment may be impaired and threaten the sustainability of the stock.

The European Commission's Green Paper on the future of the CFP (2001), states that the estimates of fishing mortality (F) and SSB are uncertain and even if, as an example, the SSB is estimated as being 30 % higher than the Blim, it might in fact be at the Blim level. In order to allow for this inaccuracy, ICES has proposed that managers who formulate the fisheries policy and recommend catch quotas, apply a safety margin or a buffer zone. The corresponding reference points are labelled Bpa (biomass precautionary approach) and Fpa (fishing rate precautionary approach). The differences between these reference points reflect the uncertainties in the fish stock and exploitation assessments. The difference between the Blim and Bpa and between Flim and Fpa is generally in excess of 30 % for many stocks. It should be noted that although these differences appear to be large they might still be underestimated, as all sources of uncertainty are not included (Green Paper, 2001 and Flaaten et al. 1998). By comparing the stock

development against the precautionary approach reference points, the best available information and knowledge is utilized. The Bpa and Fpa can therefore be utilized to judge if the stock is in a sustainable state. These reference points should not be regarded as targets for biological or economic optimisation of yield, but as signposts for sustainability.

Models used in fisheries can be classified in several ways according to the size and complexity of the model. This includes various models used for stock estimation, interactions, predictions, and risk analysis, in particular their place within the hierarchy of models from very simple (e.g. Karpoff 1987) to the most complex models. As discussed by Stefansson, (Marine Research Institute, Iceland, 1996), a typical simple model can be built up around a curve based on catches and implemented on a single species virtual population analysis (VPA). Such a VPA-based approach also yields a forward projection in time. Correlation analysis can be used to estimate important relationships, e.g. a positive correlation between the biomass of a prey species and the mean weight of a predator species at a certain age, or a negative correlation between the abundance of a predator species and the recruitment of a prey species. Including the resulting relationships in the projections can now augment the ordinary single-species VPA-based projection. Given that there are now more than one species in the model, some economics have to be entered into the model if alternative harvesting strategies are to be considered. At a minimum, prices of the various species have to be used in order to compute total benefits from different harvesting strategies.

According to the Marine Research Institute of Iceland (Stefansson, 1996), a more global model of an ecosystem is constructed differently than the simple models described above. The large-model definition starts with listing the various components of interest; the species, fishing fleets, areas, and time scales to be used. After this, the model structure must be defined, i.e. an estimation model or a simulation model. The next step is to obtain the data needed to run such a model. In the case of several species which live, grow, mature and get fished in several areas, this is not an easy task. After the model has been implemented as a computer program, there is a long phase of repeated testing, model evaluation and running of the program. The main virtue of this approach is that an overview of the ecosystem is kept in mind during all steps of the modelling exercise. If a simpler approach is taken at the outset, then the resulting model needs to be overturned in order to accommodate such questions later. With a simulation model, it is possible to run individual simulation with a given set of parameters and observe the resulting migrations, abundance in each region, growth of the different

species etc. Given a simulation, the next step is to compare the results to actual data, using some likelihood functions as criteria for the quality of the model and parameters. The simpler approach will allow for a development phase which is clear and the net effect of each model addition is clear, whereas the larger, all-encompassing approach allows for the inclusion of all major factors in the system right at the outset, and also allows testing for effects which cannot be described within any simple model. (Stefansson, 1996).

In a fisheries model, landings and fishing mortality are important factors. Besides landings and natural mortality, discarding of good and edible fish is an unfortunate and negative sustainability factor. After being pulled out of the sea, fish die quickly. Nevertheless, many fishermen discard their catches, - dead -, back into the sea, which is a complete waste of the resource. Discarding is not only an economic issue, but also an ecological one. Discarding freshly caught fish can be legal or illegal. Legal discarding happens in the EU when fish are accidentally caught which are below a minimum size, or if fish are caught in a larger than allowed bi-catch outside set quota limits. The idea behind this rule is to prevent fishermen from deliberately catching smaller fish or other species than allowed (EC DG Fisheries 2008). In Iceland discarding edible and useable fish is illegal (law no. 57 of 1996). However, illegal discarding is a different issue from legal discarding and takes place both in the EU and in Iceland. Illegal discarding is based on an economic incentive of fishermen when the quantities of their catches are limited by regulation, but there is plenty to catch. In this case the fishermen just retain the most valuable of their catches and secretly throw overboard the less valuable fish. Then they keep on fishing until the maximum quantity allowed is filled with the most valuable fish and the less valuable is left dead in the sea. Estimations on discarding vary from a low of 1-5% (e.g. studies published by the Icelandic Marine Research Institute) and up to that every second fish is thrown out (e.g. Lochhead (2008), stating that every second cod in the North Sea is discarded). The legal framework invites more waste in EU waters than in Iceland. Nevertheless, there are persistent rumours on large quantities of illegal discard in Iceland.[258] Concerning legal and obligatory discarding, we find it unacceptable that perfectly edible fish is thrown out in EU waters. Illegal discarding is a different issue and is a subject of law enforcement. It can be solved through surveillance cameras on fishing vessels in a similar manner as

[258] Recently we had ourselves a discussion with a person who resigned from a fishing vessel in disgust over illegal discarding.

many large cities have surveillance cameras on the streets and on the motorways. Coast guard access to military surveillance satellites can also reveal onboard activity which cannot be seen from land, - that is if there is a political will to do so. Fishermen certainly do not like surveillance cameras any more than car drivers like speed cameras. We are also sceptical about the policy of always catching the largest fish of a given species, because the theory of evolution indicates that after a few generations of always eliminating the largest individuals from the natural gene pool, future generations will become smaller. This is counter-productive and will require more individual fish to be caught in order to fill the catch quotas, which are based on weight rather than on individual fish count.

We believe that a part of the explanation for dwindling catches in both the EU and in Iceland (and in many other parts of the World as well) are caused by four main factors:

- The Total Allowable Catches (TAC) are too high,
- The largest fish (not the oldest fish) are regularly harvested, eventually leading to genetically smaller individuals,
- Overfishing caused by discarding edible fish, which means that total catches are larger than reported,
- Industrialisation of fishing by using trawlers that scrape the bottom and disturb the ecosystem.

7 – 5 Economic Aspects of Fisheries

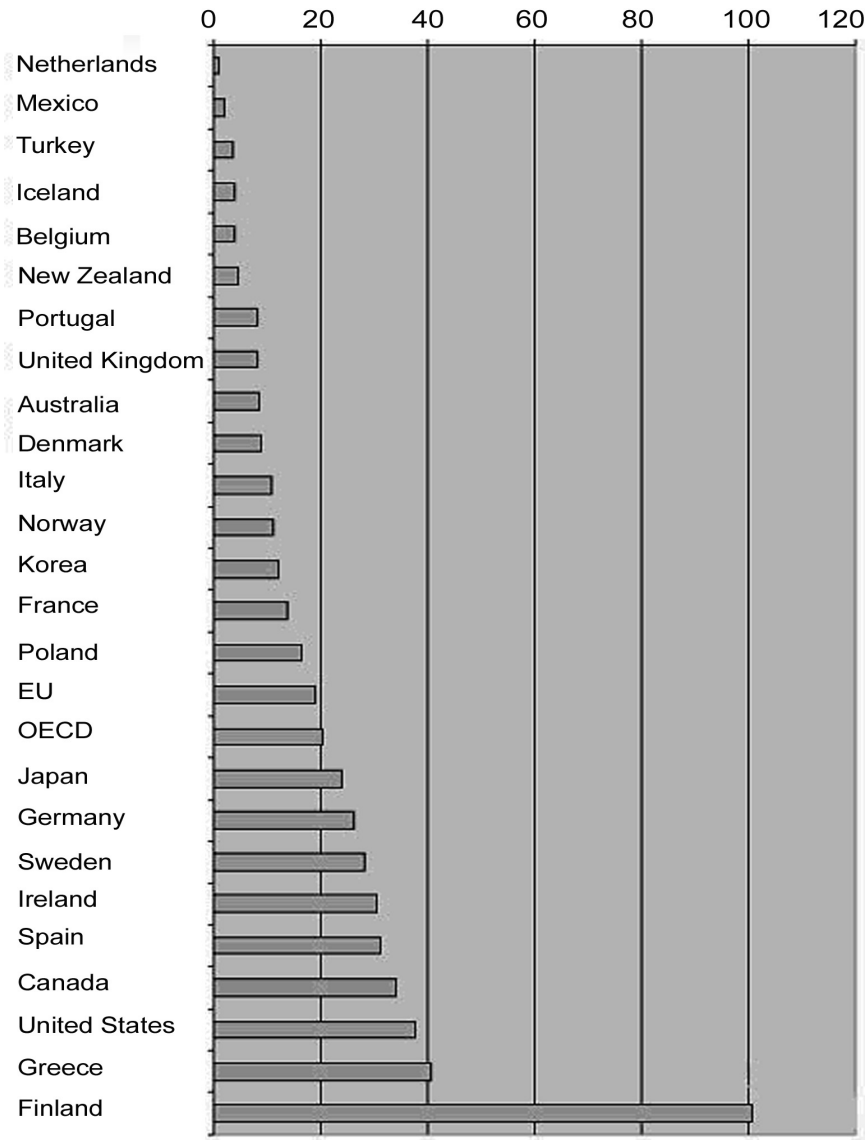
Fisheries, along with agriculture, are food production. Food is a necessity regardless of price. However, according to the laws of free markets, if price on fish goes up, the consumers will change over to other kinds of food and vice versa. But when minimum prices on fish are fixed (like in the EU) and fish is removed from the market if the prices fall below a certain minimum, the laws of the free market don't apply any more. Such measures may guarantee fishermen's wages, but may also push consumers to buy other food cheaper and consequently reduce the number of jobs in fisheries.

Fisheries are certainly a factor in local and national economies and provide employment. If fish were not be available in the oceans, those employed in fishing on the high seas, or at least a comparable number of people, would either have to work on fish farming (aquaculture) or in agriculture. To simply claim that without fisheries the fishermen would be unemployed is only true within the scope that they would not be forced into other jobs, which sometimes is a problem due to the overgenerous social security system and unemployment benefits in Western Europe. A certain amount of food is needed to feed the world population, and without fishing, that food would have to be produced by other means and perhaps by other people than fishermen. That EU fishermen (and agricultural workers) are below the average worker in productivity does not change the fact that some world citizens have to do the job, either domestically or through imports. Financial income in society is usually based on skills and status, but fisheries (and agriculture) require for the most part unskilled labour. If European fishermen would move over to more profitable jobs, their places would certainly be filled with unskilled labour from less developed countries (LDC).

In chapter 6 on agriculture we mentioned how important food is and that a certain overproduction has to be in place. The food surpluses caused by overproduction are like an "insurance premium" against natural or man made disasters and is encouraged by direct or indirect aid and protective measures for food producers. The one who finally pays this "insurance premium" is of course the consumer, either through higher prices or through taxation. However, this "insurance premium" may also be considered by some as throwing money away by supporting an uneconomical and wasteful industry, rather than let the laws of the free market dictate food production. Figure 25 (on next page) shows governments' financial transfers to the fishing industry in OECD

countries as a percentage of landed fish value and Table 30 on the following page shows a more detailed overview of where the money goes.

Figure 25. OECD Governments' Financial Transfers to the Fishing Industry as a Percentage of Value of Landings in 2003



Source: OECD (2006)

Table 30. Government financial transfers to marine capture fisheries in OECD countries in 2003 (in millions of USD)

	Management, research and enforcement	Infrastructure expenditure	Access payments	Decommissioning payments	Investment and modernisation	Income support	Other transfers	TOTAL
Australia	11	0	0	0	0	0	70	81
Canada	162	68	0	0	0	254	61	524
EU [b]	474	57	194	299	179	157	173	1532
Belgium	2	0	0	0	1	0	1	4
Denmark	62	1	0	17	11	0	0	92
Finland	10	2	0	0	0	2	6	20
France	36	1	0	5	11	16	109	179
Germany	40	0	0	2	5	0	0	47
Greece	45	18	0	0	35	0	21	118
Ireland	59	0	0	0	6	0	3	68
Italy	32	0	0	116	0	0	0	148
Netherlands	0	0	0	4	0	0	2	6
Poland	10	0	0	0	0	0	0	10
Portugal	26	0	0	0	0	1	0	27
Spain	69	30	0	142	108	137	17	504
Sweden	24	1	0	1	1	2	2	31
United Kingdom	67	3	0	0	0	0	0	70
Iceland	19	0	0	0	0	16	0	36
Japan	560	1708	0	13	26	5	0	2312
Korea	22	395	0	18	1	0	59	495
Mexico	21	0	0	0	0	0	0	21
New Zealand	19	0	0	0	0	0	0	19
Norway	125	0	0	3	0	1	13	142
Turkey	2	17	0	0	0	0	0	19
United States	1094	18	0	100	0	1	78	1290
OECD	**2508**	**2263**	**194**	**432**	**206**	**435**	**454**	**6472**

a. Includes OECD estimates for some countries. b. Sum of all EU countries plus access payments.

Source: OECD: Financial Support to Fisheries: Implications for Sustainable Development. (2006). ISBN 9264036636.

It is worth noting that according to the OECD data, governments' financial transfers in the EU, as a percentage of value of landed fish, is almost 4 times higher than in Iceland, although there is a large difference between member states.[259] It is open to discussion if this is just the food supply "insurance premium" or if this is governments' way to support an unprofitable industry and to create jobs, the theory being that an unprofitable job is better than no job at all. It is also worth noting that it is not only the EU countries that spend much on supporting fisheries, but USA and Japan do the same.

Just like in agriculture, government support to an industry creates a certain deadweight loss. Using taxpayers' money to support an industry will be at the expense of other non-supported industries. As noted in chapter 6 (on agricultural policy), estimations on deadweight losses vary, but there is a (almost) consensus that it is there. European and Icelandic fisheries quotas are as a general rule distributed free of charge. Since fisheries are theoretically a renewable resource like wind power, this may seem reasonable, although exploitation of non-renewable resources like oil might be different. However, in sake of fairness of distribution, because of the limited regulatory access to the fisheries resources, auctioning off the yearly quota may seem more fair than giving it gratis to selected fishermen or fishermen's organisations.

In the European Union there are approximately 250 000 fishermen, including several thousand part time fishermen. (Shown in Table 27 on pages 193-194 and Figure 18 on page 194). This represents almost 1 % of all jobs in the EU. Aquaculture (fish farming) provides another estimated 50 000 full and part time jobs[260]. In 2005 the value of the whole production chain, including fishing, aquaculture, processing and marketing reached approximately 24 billion Euros or close to 0.25% of GDP.[261] In 1998 the figure was close to 20 billion Euros, i.e. 0.28% of EU GDP and in 1990 the value of production was 18 billion Euros, also 0.28% of EU's GDP (EC Green Paper on the Future of the CFP, Volume

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[259] We would like to draw attention to that Hauksson (1998), estimates Iceland's transfers to the fishing industry per fisherman as almost comparable to the EU, mainly because of tax reductions to fishermen in Iceland.

[260] Eurostat / FAO 1995 data published by the EC in 2001. Annex 3 on pages 252-253, based on figures from the European Commission in 2005, is not complete. The figures vary somewhat as not all member states report yearly or use slightly different criteria. For comparison, aquaculture in Iceland is very limited, which is not surprising, considering the abundance of wild fish.

[261] Approximately 18 billion Euros in processing and 6 billion in catches, with some variations in figures reported. (EU DG Fisheries 2007).

II). In addition, the EU fishing fleet of around 90 000 vessels also requires services and provides several jobs in coastal areas.

According to the EU Green Paper on the future of the CFP, the economic and financial situation and the performances of the EU fishing fleet during the period 1994 - 1999 can be summarised according to certain general characteristics, which have then to be specified in view of the differences between countries and fleet segments:

* High capital intensity. Invested capital per job in the fisheries sector in general is very high. Invested capital in the EU fisheries sector is on average ten to twenty times the average 1999 gross fixed capital formation;[262]
* Very high value added per job. There is a close relation in this sector between the level of the invested capital per job and the value added per job. With some exceptions, the value added per job in fishing is higher not only than in agriculture but also than in industry or in the economy as a whole, despite the relatively low qualification levels for jobs in the fisheries sector. In general, however the higher the invested capital, the less relative value added is generated;
* Poor financial profitability. Over the period 1994-1999, the net profit of many EU fishing fleets, often negative or very weak, did not allow to remunerate the capital normally. In other words, despite the high level of value added per job, it often remained insufficient to cover at the same time the crew's share and the financial costs related to high capital-intensive equipment.

In Iceland the economic impact of fisheries is larger than in most parts of the EU. In the early 1990s fisheries used to provide about 15% of the GDP, in 2000 about 12% (National Economic Institute of Iceland, 2002)[263] and in 2007 about 6%, although as noted earlier, the 2007 figure is not so much due to decline in fisheries per se but more due to a large "bubble" increase in the GDP within other sectors. Fisheries employ about 5-6% of the Icelandic workforce, which correlates very well with the percentage of the GDP they directly provide. Without fisheries, the more than 2/3 of the Icelandic economy that provides various services

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[262] The overcapitalisation is a legacy of earlier policies to increase fishing capacity. Despite ongoing reductions in fleet capacity, it takes a long time to wind down the investments. This applies both to EU and to Iceland. Overcapitalisation of a certain industry contributes to society's deadweight losses.

[263] Industry (other than fisheries industry) and construction is about 25% of current Icelandic GDP, agriculture 2%, Government services 19% and services by private companies and individuals is 43% (year 2000 statistics, National Economic Institute of Iceland).

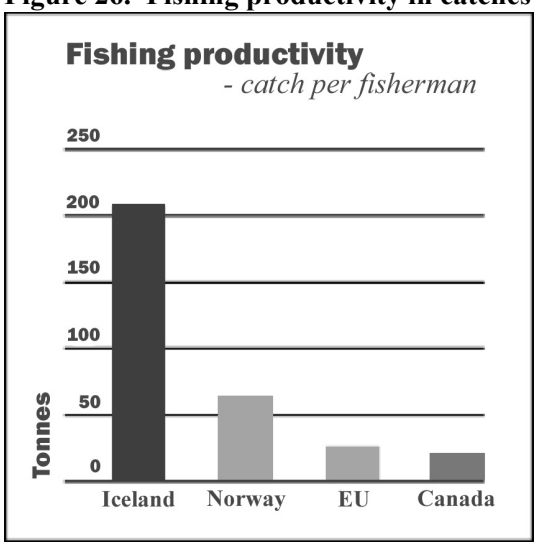
would likely be worse off. A service economy can only thrive if there is some underlying production. In an open economy, such as Iceland through its participation in the EEA, it is less critical if the production is domestic or foreign, than in a closed economy, as there is not only a free flow of goods in the EEA, but also a free flow of services. However, not all services can flow freely because of their very nature. It is easy to open a foreign bank account, but not very practical to travel abroad for e.g. a haircut.

As discussed in chapter 5, Iceland is not a part of the Euro-zone. Fisheries in Iceland provide about 1/3 of the foreign currency earnings. It should be noted that until Iceland joined the EEA there were restrictions on foreign currency dealings in Iceland and the Icelandic Krona was not freely convertible. The black market price of foreign currencies was higher than the official bank rate. Although the Krona was artificially strong, devaluations were also frequently used to help the fisheries industry pay their domestic expenses. However, the devaluations were always a last resort measure and the official exchange rate remained abnormally high. After joining the EEA, the exchange rate of the Krona was first based on a basket of currencies and then it floated. Until 2008 there was sufficient foreign currency to maintain free foreign currency dealings, imports and exports to and from Iceland. Nevertheless, the banking crisis in 2008 caused serious imbalances in foreign currency supply and large fluctuations of the exchange rate, leading the Icelandic Central Bank to impose foreign exchange restrictions in accordance with the emergency clauses on capital markets specified in the EEA agreement. Without the fisheries as a large export industry, foreign currency earnings would be even more critical than they are now, leading to import restrictions, or alternatively serious imbalances in the external trade, which is not sustainable in the long term, or a much lower value of the Krona, which would affect the economy as a whole through more expensive imports.

In the EU Mediterranean countries there are still several small-scale fisheries with very small vessels. These are labour intensive but cheap to operate and maintain, and often more ecologically sound than the large trawlers. In the Atlantic, and that applies both to EU and to Iceland, the proportion of large expensive vessels is much higher. These larger vessels are capital demanding but cheap on labour in relation to their capacity. In many parts of the European Union, fisheries are a way to provide jobs in coastal areas. In contrast, Icelandic fisheries are a large industry of great importance to the country's economy. The same can also be said for some local areas within the EU such as the Atlantic coast

of Spain, east coast of Italy and in Scotland, but not for the EU as a whole. EU catches are about 5 times larger than Icelandic catches (see e.g. Figure 20 on page 197, Figure 22 on page 204, and Table 31 on page 227), but with a much higher effort-result ratio. On average a EU vessel caught around 60 tons per year[264] and an Icelandic vessel caught around 900 tons per year[265], or close to 15 times more per ship. Average catches per fisherman in Iceland is between 200 and 250 tons per year. In the EU the average catches per fisherman is 20 to 25 tons per year. This means that the Icelandic fisherman catches on average about 10 times more quantity than his EU counterpart. Figure 26 (below) shows fishing productivity in catches per fisherman.

Figure 26. Fishing productivity in catches per fisherman



Source: Close to the Sea, 2nd edition, published by the Ministry of Fisheries in Iceland (1998).

Part of this large difference in catches is of course explained by small individual enterprises run by local fishermen with small boats, having limited capacity, e.g. in the Mediterranean, but partly it is the size of the EU fleet that is too big for the fish left in the sea. Nevertheless, quantity of fish does not mean quality. Different species fetch different prices, e.g. a kilogram of lobster is generally worth more than a kilogram of cod. Consequently, we shall proceed to compare the value of the fish,

[264] Almost 6 million tons / approximately 90 thousand vessels.
[265] Approximately 1 ½ million tons / approximately 1600 vessels.

but not just the total tonnage caught. As noted above, the value of the whole production chain in the EU, including fishing, aquaculture, processing and marketing is close to 24 billion Euros (close to 0.25 % of the total GDP). The value of the fisheries and fisheries industry in Iceland is close to 850 million USD[266] (close to 6% of GDP). Comparing this with the number of fishermen, an Icelandic fisherman brought approximately 50% more total value out of the sea and into the production chain than his average EU counterpart, although the value per tonne caught in Iceland is under the EU average:

(1) Iceland: 850 million USD[267] / 6000 fishermen = 142 000 USD / fisherman.

(2) EU: 24 000 million Euro[268] / 250 000 fishermen = 96 000 Euro / fisherman.

It must also be noted that within the EU there are large differences in productivity based on geographical areas. The EU has a common fisheries policy for all its members and we have elected not to go into internal area analysis in this study, but only to compare the CFP to the Icelandic fisheries policy. Table 31 on next page shows the distribution and evolution of fish production in EU member states and EU candidate countries, the EEA, Iceland, and the World. Obviously, both EU member states and Iceland can be further broken down into regions, which can be appropriate when discussing social issues of fishermen.

[266] For the purpose of this comparison, we will state that one US Dollar equals one Euro. Early last decade the dollar was about 25% less than an ECU, in 2002 it was 15% higher than the Euro, late 2002 the exchange rate was about one for one, and as of this writing it value is about 2/3 of the Euro. Based on fluctuations in freely floating currencies we believe that a one to one is a reasonable long run comparative value, especially taking into account the price of goods on both sides of the North Atlantic.
[267] Idem.
[268] Idem.

Table 31. Evolution of fish catches in EU, EEA, and The World, from 1990 to 2006 (in tonnes live weight)

	1990	1995	2000	2005	2006*
EU-27	:	8 054 070	6 794 180	5 632 045	:
EU-25	:	8 034 291	6 779 810	5 620 543	:
EU-15	6 250 260	7 237 012	6 150 037	5 056 326	:
BE	41 470	35 631	29 807	24 569	22 519
BG	49 254	8 012	6 998	5 433	7 514
CZ	:	3 929	4 654	4 242	4 646
DK	1 475 716	1 998 908	1 534 074	910 650	867 844
DE	326 316	238 829	205 249	285 667	279 040
EE	131 178	132 030	113 159	99 581	86 902
IE	215 485	389 646	276 237	262 482	210 670
EL	132 381	151 717	99 344	92 026	96 707
ES	1 126 318	1 178 941	1 069 868	768 267	710 897
FR	689 662	675 134	703 439	595 275	582 846
IT	371 873	396 797	302 155	298 459	312 047
CY	2 584	9 320	67 482	1 880	2 098
LV	162 827	149 194	136 403	150 618	140 389
LT	137 598	57 368	78 989	139 785	153 111
LU	0	0	0	0	0
HU	16 234	7 314	7 101	7 609	:
MT	787	4 635	1 074	1 336	1 348
NL	404 816	438 110	495 774	549 208	433 235
AT	533	404	439	370	:
PL	448 292	429 372	217 686	156 246	:
PT	324 776	263 871	191 118	211 767	229 094
RO	92 784	49 275	7 372	6 068	6 664
SI	:	2 167	1 856	1 227	1 133
SK	:	1 950	1 368	1 693	1 718
FI	123 024	154 529	156 422	131 737	146 045
SE	250 985	404 591	338 540	256 356	269 255
UK	766 904	909 904	747 570	669 493	615 780
IS	1 521 877	1 624 100	1 999 980	1 661 139	1 344 516
NO	1 603 073	2 524 355	2 699 535	2 392 528	2 245 222
EEA	:	12 202 526	11 493 695	9 685 711	:
HR	:	16 268	21 068	34 683	:
MK	:	208	208	246	:
TR	379 093	633 971	503 355	426 496	:
World	85 469 034	93 352 040	96 684 034	93 813 943	:
For 2006, captures from Inland Waters may be missing from the total for some countries					

Source: Eurostat (2007). (List of abbreviations is on pages 13-15).

We wish to draw attention to that the EU CFP does not distribute the national catch quota within a member state. The EU, under its CFP programme, is only involved in distribution of catch quotas between member states and in the decision on the total allowable catch (TAC). The internal distribution of catch quotas within a EU member state remains a national prerogative. The EU does not catch fish, but individual fishermen and fisheries companies do. The EU does not meddle in how individuals run their businesses compared to others in the same sector, as long as Community rules are respected. Based on this, it is rather unlikely that Icelanders and the Icelandic "quota barons"[269] would have to fear that the EU would change their controversial ITQ[270] system or confiscate the "owners" rights, or meddle in their domestic financial dealings using the ITQ as an object of value or collateral. The EU will, however, monitor how EFF[271] money is used and decide on the size of the TACs. The rest would up to the Icelanders themselves to decide upon. The only open question is if the "owners" of the Icelandic ITQ want to sell their quota to non-Icelandic fishermen. When member states want to move quota between themselves, it is not a domestic affair any more.

[269] As referred to earlier, "quota baron" refers to the de facto owners of the Icelandic Individually Transferable Quota (ITQ), regardless of if they use it themselves, rent it out, sell it, or use it as a collateral for business loans or other investments.
[270] Individually Transferable Quota.
[271] European Fisheries Fund, which replaced FIFG in 2007.

7 – 6 Political and Social Issues in Fisheries

As much as the environmentalist wants to protect the earth and the economist wants maximum yield, the politicians want to stay in power. The politicians in democratic countries stay in power by being popular and doing what the people like. Fishermen want jobs in fisheries and cuts in fisheries are unpopular. It can be difficult for a politician to go against the wishes of his electorate. As noted by Townsend (1995), fishermen and the regulator seem rather indifferent about the future. The CFP's unwritten but overriding objective seems to be social peace (Boude et al. 2001). We would also like to add that most politicians in democratic countries have a very short lifespan as powerbrokers and consequently are more indifferent to the long-term effects of their policies. This is very evident in the case of the CFP when EU fisheries ministers repeatedly agree to allow higher TACs than marine biologists suggest. Obviously the question must be asked why Iceland is different and follows biological-scientific advice better than the EU in developing TACs. The answer is most likely the difference in size. The EU is huge, and under the CFP with 250 000 fishermen scattered over most member states, fisheries fall under the common property theory, where as Icelandic fisheries fall much better under a private property theory with only 5000 fishermen. As discussed in chapter 6 on Agriculture, political psychology is also an explaining factor, along with the cultural attitude of the EU as an institution, where there is an effort to avoid confrontation and to keep every member happy, even if it means agreeing on a compromise. The EU decision-making process is often a legacy of the Union's early years, where there was a substantial effort made to make unanimous decisions rather than to use simple or qualified majority decisions. Thorhallsson and Wivel (2006) draw attention to the "consensus culture" in the European Council of Ministers. The results are often a compromise based on the lowest common denominator. Although it may not help the fish, the reader may wish to reflect upon if democracy is that the majority decides, or if it is that everybody has a say in a compromise decision.

The saying "out of sight, out of mind" applies to fisheries. It is easy to see a destroyed rain forest, but it is not so easy to see a ruined ocean floor. The state of the fisheries resources is a highly controversial issue. Fish scientists can make mistakes (Flaaten et al. 1998)[272] and

[272] Also confirmed verbally to the author by a Ministry of Fisheries official in Iceland.

politicians know that. This is the reason why precautionary approach (pa) is taken in developing harvesting models. Economists can also differ in their opinions and politicians can exploit that. But the social issue (Charles 1989) is also a decisive factor. An example is a minister of fisheries in Iceland a couple of decades ago who said, "The economy cannot withstand that we follow the advice of the fisheries experts".[273] He directly advocated overfishing. The reader may wish to reflect upon if it was wise or unintelligent to suggest that the capital (capital meaning fish stocks) be touched until the economy got out of a recession. Sometimes it may be justified to touch the capital and sometimes it is the beginning of the end. Fish scientist and marine biologists try to establish facts, but how the resources are managed is up to political, social and economic managers, not up to fish scientists themselves.

Some economists have argued for fishing less than the fisheries scientists suggested as allowable sustainable catches. This would avoid shocks to the economy if catches fail between years. Since fisheries are about 6% of Iceland's GDP, a possible 50% fall in catches one year would have drastic chain reactions in the service economy. In the EU, however, fisheries are only 0.25 % of the GDP so if all EU fish disappeared, the chain effect on the economy would be minimal (while large fish exporting nations would be delighted for this new and "hungry" market). The fisheries policy in Iceland in recent years has essentially been to follow the advice of the fisheries experts. But it is now turning out that some of the fisheries advisors may have overestimated the fish stocks, and thus the scientific advice was in reality inadvertently overfishing. Here we might recall the discussion on the precautionary approach when developing fisheries models. Obviously the catches will then have to be reduced if the fish stocks are not to be depleted. This is an issue for managers to decide upon. The reaction could be one relatively large cut in catches with an economic shock, or a gradual reduction in catches, allowing smoother economic adjustment. But a gradual change requires some continued overfishing, which will have to be compensated for by even further reductions in future catches.

Following the publishing of the European Commission's Green Paper in 2001, there is absolutely no questioning that EU waters have been overfished for years. There is scientific consensus on that and dwindling catches to prove it, despite better technology in catching the

[273] Note Karpoff's discussion in 1987 on that biologist should also know some economics.

few fish that are still left. As mentioned above, the overall economic impact of fisheries on the EU is low, but many local areas are as dependent on fisheries as Iceland. The European Commission has for years argued for reducing the catches to prevent collapse of fish stocks, but EU fisheries ministers have always supported overfishing. Reducing fishing quotas drastically is not done because it provokes revolt from fishermen. Since fish stocks take years to disappear, we have to ask ourselves if the average fisherman would be willing to lower his income in order to have a job in 20 years time? The answer is almost certainly no, because by then he will have retired or be in a different job anyway. A typical news headline in December following the annual meeting of EU's fisheries ministers setting the catch quotas is: "European Union fisheries ministers have agreed to cut next year's national catch quotas, but less drastically than the European Commission wanted. EU's fisheries ministers battled through the night with representatives of the Commission."[274] The European Commission knows that the CFP is heading for possible irreversible problems, but the EU fisheries ministers have not reacted sufficiently. For the last few years, the EU fisheries ministers have agreed on further measures to accommodate the European Commission's suggestions to reduce fishing efforts, and although many suggestions have been adopted, it still lacks a lot to be desired. A possible solution is that the fish in the high seas becomes private property as suggested by Scott in 1955, or if possible, transferable dynamic stock rights could be tried as suggested by Townsend in 1995. This means that governments would simply lease or sell (or even give free of charge[275]) the resource to a private industry and relinquish their right to influence its use. However, since fish stocks interact with each other and move freely around, such an arrangement could be difficult to settle internationally, or even between different exploiters of the resource (e.g. cod eating the capelin and shrimp stocks, or in the case of migrating fish stocks).

The way politics involve fisheries in Iceland is much less a struggle between protecting the resource on one hand, and keeping fishermen happy by letting them catch as much as they wish on the other hand. Rather, it is a question of export and marketing while at the same time protecting the ownership of the resource from the CFP common

[274] This particular verbatim quote is from CNNI text TV on 19th December 2001.
[275] Needless to say, we do not agree to give away valuable public property free of charge to some individuals. However, this is commonly done when fish catch quotas are distributed.

property attitude.[276] Fish and agriculture is not a part of the agreement on the European Economic Area (EEA), but covered by special provisions in protocols to that agreement, which turns the fisheries aspects of the EEA into little but a bilateral agreement on trade in fish between the EU on one hand and Iceland and Norway on the other hand. Protocol 9 specifies abolition of customs duties on certain species of fish, and reduction in duties on other. There is no totally free trade as with industrial goods, and as much as Iceland would like completely free access to the EU markets with fish, it is not on the agenda with the EU, and neither is a revision of the EEA agreement on EU's agenda. However, Iceland has been free to apply for EU membership. A membership of the EU may provide advantages, but at the price of being subject to the CFP. Iceland has aligned the veterinary and sanitary requirements on fish to the EU regulations, which prevents those rules under normal circumstances to be used to restrict or delay imports. Iceland would like a completely free market access for fish into the EU, and the EU wouldn't mind fishing rights in Icelandic waters in exchange. But as always, it is not possible to both keep and eat the cake. Consequently, for the time being, there is no major political change about fisheries agreements between Iceland and the EU underway.

According to the theory of free trade, with no restrictions, every country produces what it does best at the lowest price. There are, however, arguments for and against protectionism and for and against globalisation. The EU wants to keep employment in the fishing industry, but there is not enough fish to support all the fishermen's jobs. This difference is solved by contracts with third countries for fishing rights, and by overfishing in EU waters. In contrast, Iceland depends on fisheries to a much larger extent than any EU member does and in Iceland there is still sufficient fish to support large exports. Owners of Icelandic fisheries companies must be Icelandic citizens (Report of the Icelandic Minister of Foreign Affairs on the position of Iceland in European Cooperation April 2000). This excludes EU citizens from ownership. At the same time Icelanders want completely free access to EU countries with their fisheries products, just like there is free access to Iceland with EU industrial products. The difference is, however, that Icelandic citizens are not excluded from being owners of EU industrial companies, if they wish to

[276] Lately, as previously mentioned, there is an increasing political controversy in Iceland over how the Icelandic TACs are distributed between local fishermen, where some individuals have claimed ownership of the catch quota based on tradition, don't use it themselves, and sell it to others for a profit.

invest their money there. But it could also be argued that European industry is still a free enterprise compared to fishing, which is severely regulated with catch quotas and vessel restrictions in both the EU and in Iceland. The question may of course be asked if the EU would be better off by importing more fish, e.g. from Iceland and other countries, at lower prices than it can produce it domestically, and at the same time transfer fishermen into other industries. This would depend upon other jobs being available and the problem of immobility of fishermen discussed by Gordon in 1954 still applies. From a macroeconomic perspective, if EU fishermen occupy almost 1 % of all EU jobs and the value of the whole production chain, including processing, is only 0.25 % of the Unions GDP, it seems quite obvious that the Union's fisheries are rather unprofitable.

7 – 7 Comparison of EU and Icelandic Fisheries Policies

7 - 7. a. Purpose.

The purpose of the EU fisheries policy is to preserve fish stocks, to guarantee fishermen's livelihood by letting them catch fish, and to ensure a steady flow of fish to consumers at "reasonable" prices.

The purpose of the Icelandic fisheries policy is also to preserve fish stocks and to guarantee employment in the sector and food supply. In Iceland, however, fish exports also provide extremely important foreign currency earnings, which is not an issue in the EU.

7 - 7. b. Structure.

The structure and management of the EU CFP is more rigid and formal with the common organisation of the market, MAGPs[277], FIFG[278], and EFF[279] (and to a certain extent also the European Regional Development Fund and the European Social Fund), than the Icelandic management. This is not surprising. The EU may be blamed for bureaucracy[280] but with 250 000 fishermen scattered throughout most member states, a structure is needed. In contrast, ad hoc management is very common with the Icelandic government and it is much easier because of the small population. For comparison, a structured and regulative approach like we see in the EU management also applies to large multi-national corporations. Large multinationals have and need more internal regulations and policies than small private companies require.

7 - 7. c. Management.

Managers can only take decisions based on available information. Consequently, fisheries managers depend heavily on fisheries scientists to decide how much fish there is in the sea and how much fishing the fish stocks can support without dwindling or collapsing. Marine biologists, just like economists, sometimes have different opinions and can be

[277] The term MAGP (Multi Annual Guidance Programme) is not used after 2002.
[278] Financial Instrument for Fisheries Guidance until 2007.
[279] European Fisheries Fund as of 2007.
[280] For those claiming that the EU are bureaucrats, we may wish to recall that the EU employs about 25 thousand civil servants, but the Soviet GOSPLAN (the state committee in charge of planning in the former Soviet Union) employed one million civil servants with much less success.

somewhat hand-picked by political decision makers based on what the politician wants to hear. However, we have no indication that there is any serious intentional manipulation of scientific data, neither in the EU nor in Iceland. In fact, international coordination in this field is good and the scientific basis to make informed decisions is quite clear in both places. The honesty and quality of work presented by the civil servants of the European Commission and Ministry of Fisheries officials in Iceland is also very good. These civil servants provide recommendations to the ministers of fisheries for approval. And that is where the quality of management ends and it becomes a political rough play.

It is not the fault of the European Commission that the EU fisheries policy has been managed in such a way that some fish stocks are close to collapsing. The only "fault" that can be found, - that is if it is a fault at all, - is the required discarding of non-unauthorised but edible fish, although this rule is set to prevent intentional catches of small fish and by-catches of other species outside set quota limits (discussed in chapter 7, part 4, on Ecological and Biological Aspects of Fisheries). The European Commission has repeatedly warned about the rapidly dwindling fish stocks, but the warnings always fell on deaf political ears. The EU fisheries ministers have always approved overfishing. Their motives seem quite obvious. They simply do not want a confrontation with unscrupulous fishermen, protests, blocked harbours and unemployment. If it means that sometime after the ministers' time in office there will be no fish left, they seem not to care. It would not be surprising either, that in the future the fishermen of today would be blamed for their "greed", although the regulators and politicians also carry a large responsibility.

In Iceland the quality of advice as a general rule has been just as good as in the EU. But within the last one or two decades there has been a much stronger political will in Iceland to follow the scientific advice on sustainable fisheries than has been the case in the EU. Iceland has much fewer fishermen than the EU. Most of the general public in Iceland seems to understand that a fisheries collapse is not the way forward and that such a collapse would have tremendous negative economic consequences both for themselves and for the country as a whole. In contrast, fisheries in the EU are such a small part of the economy that the public does not really care about it. In Iceland in the past it was more a lack of thought about how much fish could be taken out of the sea, rather than deliberate overfishing.

7 - 7. d. Economic Comparison.

There are several ways to study the economic aspects of the EU CFP: as a global EU economic factor; as a per country economic factor; or as a local fisheries village economic factor. Legally there is a free flow of workers within the EU and the EEA (EEA agreement). However, it is easier said than done to move to other jobs within the EEA, amongst other because of the language barrier. With the exception of the captain and the higher officers on large trawlers, fisheries, just like agriculture, depend essentially on unskilled labour. Lack of education often makes finding a new job more difficult. In many local coastal areas of the EU, e.g. Atlantic coast of Spain and parts of Scotland, fisheries are just as important as in Iceland, providing 10% - 20% of all jobs. If fisheries in those areas collapse, the fishermen may move to other work within their country, although there may be certain immobility as discussed by Gordon (1954). Since fisheries do not collapse in a few moments but dwindle over a number of years, there should be ample time for fishermen to move to other occupations. As discussed earlier, fisheries do not exceed 1 % of GDP in any EU member state and for the EU as a whole it is only 0.25 % of the GDP. Considering how small part of the GDP is from fisheries in the EU, it is obvious that fisheries have very little economic influence on member states, and even less on the EU as a whole. EU fisheries are only of significance in a few regional economies.

In Iceland, as mentioned earlier, fisheries contribute directly to approximately 6% of the GDP, and also contribute indirectly to a large part of the service economy. Furthermore, they provide 1/3 of all the foreign currency earnings, which is in stark contrast to how unimportant fisheries are in the EU. Fisheries in Iceland provide a substantial input into the country's economy, while in the EU fisheries are more a social policy to keep fishermen employed. Thus the economics behind fisheries in Iceland are quite different from the EU or any EU member state.

Table 32. Comparison of fisheries policies in the EU and Iceland

	European Union's Common Fisheries Policy (CFP)	**Iceland's Fisheries Policy**
Purpose (same)	Preserve fish stocks and produce food.	Preserve fish stocks and produce food.
Structure (different)	Relatively structured and centralised with a common fisheries policy for the Union.	Relatively flexible because of a smaller and simpler bureaucracy .
Management (different)	Good factual knowledge about the state of resources. Not very successful in its purpose to preserve fish stocks. Political decisions to maintain social peace amongst fishermen.	Good factual knowledge about the state of resources. Relatively successful in preserving fish stocks.[281] Maintained as a large export industry.
Economic impact (different)	Marginal in the Union as a whole. Considerable in some regions.	Large, both regionally and for the whole country.
Scientific advice (same)	Very good.	Very good.

[281] Sown in Annexes 4 and 5 on pages 254-257, Icelandic fish stocks have in general terms declined less than EU fish stocks. Some Icelandic fish stocks have even grown over the last two decades, e.g. the herring. However, the Icelandic cod stock, which is the most important stock, has declined.

7 – 8 Effects of Icelandic EU Membership on the Icelandic Fisheries Industry

It is worth considering the effects on the Icelandic fisheries industry per se if the country joined the EU. Most Icelandic fish imported to the EU enjoys a very low tariff. Consequently, the net changes in fish sales and profits if becoming a EU member is likely to be rather small. We also have reservations about the benefits of EU funds directed towards the fisheries industry since there is little or no room to increase fishing capacity. With little room for additional investments, at least in the short term, the financial structure surrounding the fisheries industry is not expected to change drastically, although ownership of companies might change. The major change we see in Iceland stemming from EU membership would be the long-term decline of fishing as a resource and its associated industry if EU fisheries management would be accepted in its current form. Since the EU fisheries ministers accept that more fish is caught than fish stocks can support, leading to a large decline in catches, a collapse of fish stocks cannot be excluded. This will lead to a steady decline of the industry and possibly terminate with its partial or complete disappearance. Fisheries in Iceland are a production industry and if the production stops, a large part of the service industry that depends on the production industry will also run into difficulties. It is not straightforward to say that the approximately 5 % of the workforce currently employed in fisheries could change over to other professions. There would be a chain effect of unemployment in the associated service industry, but the adjustment would most likely be smooth because fisheries normally take years or even decades to disappear. In order to avoid confrontation in the EU Council of Fisheries Ministers or qualified majority voting on fish catch quotas, it is therefore important for Iceland that the subject of quota distribution be clarified beforehand in accession negotiations. An issue we would also like to mention is possible influence of the European Economic and Monetary Union (EMU). Iceland is currently not a member of the EMU and if becoming a EU member it is expected that Iceland would join the EMU in due time. There is no guarantee that fish catches would match the economic cycles in the Euro-zone. Since the Euro as a currency is controlled be the European Central Bank, it would be impossible to use a national currency to buffer profits and losses in the fishing industry and its related exports. (The effects of the EMU are analysed in chapter 5). Although the Icelandic Krona has been floating

for the last two decades,[282] devaluations were commonly used in the past to temporarily boost profits in the fishing industry, as every time the Krona was devalued exported fish would give higher returns in domestic currency. Participation in the EMU would exclude this option, although it can be argued that a stable currency is also an advantage for an export dependent industry such as the Icelandic fisheries. The Icelandic economy's dependence on foreign currency earnings would be removed if Iceland joined the EMU.

To summarize the likely short-term effects on the fisheries industry in Iceland stemming from EU membership, we believe that ownership of some vessels and fish processing factories could move to non-Icelandic EU investors, which might push the share price in fisheries firms upwards. We see little practical difference in that or if Icelandic owners of said companies invest their profits elsewhere in the EEA than in Iceland[283]. In any case, there is little room for additional investments given the current catch quotas. When entering the EEA, Iceland agreed to a free flow of capital with the other EFTA-EEA states and with the EU countries, with the exception of ownership of fisheries companies. Extending this free flow of capital to the fisheries companies cannot be a major issue, as long as the rule is maintained that a certain amount of landings must be processed in the country of the vessels' registration, which indeed is a measure to support local industry. As the current Icelandic catches and catch quotas are all "sold out", there cannot be a major change neither in the quantity nor price on the sales simply by joining the EU. The biggest and most likely change would be the steady decline of the resource, eventually leading to a collapse of the industry as a whole, - unless the current EU management practices are changed dramatically in line with the Icelandic management practice.

There have been suggestions that the Icelandic fisheries resource would be better utilized if fishermen (fisheries companies) had to pay a fishing fee (see e.g. Gylfason (1992), Gylfason (2001) p. 246-251, and Gylfason and Weitzman (2002)). Fishing fees are not incompatible with EU membership. As noted by Sigurjonsson (1991), based on tradition, the fisheries quotas in Icelandic waters would normally be allocated to those who used them in the most recent past, which for the largest part are the Icelanders themselves. This is in accordance with the principles of relative stability. Although decades and centuries ago other nations used to fish in waters which are today within the Icelandic exclusive economic

[282] Temporarily suspended after the economic crisis in 2008.
[283] E.g. tax shelters such as Luxembourg.

zone, the EU quota distribution is based on current fishing activities. Consequently, after the EU fisheries ministers decide on the yearly TACs, it would then be an Icelandic national affair how Iceland distributes its allocated quota internally, just as it is today. The scenario would most likely be that the EU TAC given to Iceland would be higher than suggested as sustainable yield by the Icelandic Marine Research Institute. Iceland would then have the option not to distribute the excess part, arguing that it would be counterproductive for future fisheries. Such an argument would likely fall on deaf ears amongst many of EU's fisheries ministers. This would then risk that some EU fisheries ministers at their next quota allocation meeting would rather see the quota unused by Iceland allocated to other nations in order not to "waste it". That would be a no-win solution as the excesses would still be caught and additionally not to the benefit of Icelandic fishermen. The other solution, which is the one we prefer, is that Iceland would sell its catch quotas on a gradual price scale. When the catches in Icelandic waters reach the limits suggested by marine scientific advise, the prices on the remaining quotas would be set so high that it would not be economically viable to use the marginal catch difference all the way up to the EU allocated TAC. In such a manner Iceland would offer all its allocated quota for distribution, but at the same time ensure that sustainable yield would not be exceeded as nobody would be willing to pay the "exorbitant" fees for the quantity passing sustainable yield. As mentioned above, it is important that the quota distribution is not left to chance, subject to yearly negotiations and the mood of those implementing the CFP, but pinned down in accession negotiations.

7 – 9 Concluding Remarks on Fisheries Policies

When considering whether the Icelandic fisheries policy is comparable to the EU CFP, and if not, what the differences might be, we can conclude that the management of Icelandic fisheries differs considerably from the EU CFP. There are similarities between the Icelandic and EU CFP scientific advice, although the political decision on Total Allowable Catches (TACs) are not based on the same ideas. In Iceland it is sustainable yield that decides the TACs, and in the EU CFP it appears to be more contemporary yield that influences the TACs, rather than the official line of long-term sustainability. In contrast to Icelandic fisheries policy, EU fisheries ministers always agree on catching more fish from the ocean than the fish stocks can support in the long term. Since wild fish stocks are currently one of Iceland's most important natural resources, contributing to about 6% of its GDP, damage to the fisheries as a resource would hurt its economy considerably more than it would hurt the EU, where fisheries are only 0.25 % of the GDP. Annex 4 on page 254-255 shows the negative evolution of fish stocks in EU waters over the last 3 decades. It is difficult to say where this will end, but a 50% reduction in fisheries is what the EU is facing right now. Therefore it cannot be excluded that the same might happen in Icelandic waters unless precautionary measures would be clearly specified in the accession treaty. We find that the EU practice of allowing constant overfishing year after year, because of local community and social needs of the current generation of fishermen, is very counterproductive for future generations. We also have to emphasize quite strongly our opposition to a possible destruction of the planets ecosystems through overfishing, especially when there is no need for it in order to produce sufficient food for everybody.

Fisheries policy is a politically sensitive subject in Iceland when discussing possible EU membership. Furthermore, as mentioned above, there is also an ongoing discussion in Iceland about the internal distribution of fisheries catch quotas. Some fisheries companies have claimed an almost ownership of the catch quota, based on tradition, and in some cases are not using it themselves, but selling or renting it to others. It is important to recall that the EU CFP does not distribute the national catch quota within a member state. As mentioned earlier, the EU under its CFP programme is only involved in distribution of catch quotas between member states and in the decision on the total allowable catch. Internal distribution of catch quotas within a EU member state is a domestic affair.

It is clear that fisheries contribute much to the Icelandic economy and to the service industry that depends on fishermen. A destruction of the fishing grounds would be a disaster. Nevertheless, it seems a mistake to simply exclude EU membership beforehand because of the Union's CFP, without trying to negotiate an acceptable deal, where strong emphasis would be on sustainable fisheries. It is not possible to tell in advance if an acceptable deal can be reached or not, but Iceland can demonstrate a considerably more responsible fisheries policy than the EU, which should give a good negotiating position. Clearly, in any EU accession negotiations political-legal issues would have to be worked out for the fisheries industry in order to protect the resource from overexploitation, i.e. that scientific advice on catch quotas be followed regardless of contemporary economic requirements. The facts on European fisheries are clear, both the marine-biology and the economics, but political-legal solutions acceptable to all remain to be worked out.

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8. Making up the Balance and Conclusion

8 – 1 Summary of Economic Effects

In the preceding chapters we have studied the effects EU membership would have in Iceland. Because of Iceland's membership in the European Economic Area, the effects are not as far reaching as for total outsiders. Our conclusions are that the most important factors that would change are the:

(1 State's budgetary expenses, where the Icelandic state would be a net contributor to the EU in line with other rich EU member states;

(2) Monetary union, where estimations on effects vary substantially, but almost all indicate positive effects;

(3) Agricultural policy, where the Icelandic society's benefits from the Common Agricultural Policy would be cheaper food and that the least efficient farmers will be pushed into more productive jobs;

(4) Fisheries policy, which is an unsolved problem where the EU Common Fisheries Policy in its current form could possibly lead to losses by damaging the long-term viability of fisheries.

As noted in chapter 4, the Customs Union, foreign direct investment and economic specialisation are not likely to have large effects[284].

Table 33 shown on next page summarises the macroeconomic changes in Iceland from EU membership and makes up the balance as a percentage of GDP. Table 33 (on next page) is based on the findings presented in preceding chapters and essentially answers the economic part of the central question raised in the introduction in chapter one, by providing a profit and loss calculation on the effects in Iceland if Iceland abandoned the EFTA-EEA arrangement for EU membership.

[284] If Iceland were not an EEA member, this could be different.

Table 33. Estimated total macroeconomic benefits and costs for Iceland from EU membership, as a percent of GDP

	Benefit	**Cost**
State finances: [285]		0.25% [286]
Customs Union: [287]	Negligible [288]	
Economic and Monetary Union: [289]	5% [290]	
Common Agricultural Policy: [291]	1.25% - 2.5% [292]	
Common Fisheries Policy: [293]	Minimal [294]	0.00% - 3% [295]
Other effects, foreign direct investment and specialisation: [296]	Negligible [297]	Negligible [298]
Total benefits and costs:	Benefits of between 6.25% and 7.5%	Costs of between 0.25% and 3.25%
Average theoretical benefits beyond costs:	(6.25% + 7.5%) / 2 - (0.25% + 3.25%) / 2 = 5.1%	
Likely benefits and costs based on political options: [299]	(6.25% + 7.5%) / 2 = 6.9%	0.25%
Grand total: [300]	6.9% benefits minus 0.25% costs = **Benefits of 6.6 % of GDP** [301]	

[285] Discussed in chapter 4. Payments to the EU minus payments received back from the Union.
[286] With an error of estimation of 0.15 percentage points up or down.
[287] Discussed in chapter 4.
[288] Because Iceland is already in the EEA.
[289] Discussed in chapter 5.
[290] When all of Europe has adopted the Euro. With the current size of the Euro-zone the effects would be about half, i.e. 2.5% of GDP.
[291] Discussed in chapter 6.
[292] Of this amount savings on food corresponds to 0.75% - 2% of GDP and a further estimated 0.5% of GDP comes from farmers moving to more productive jobs. Households' direct savings on cheaper food would be higher, i.e. 1.5% - 4% of their income.
[293] Discussed in chapter 7.
[294] Through total removal of customs duty on fish products and possibly some EFF support.
[295] Depending on the outcome of accession negotiations. As outlined in chapter 7, it should be possible to have zero losses on the CFP. The 3% figure refers to a scenario where overexploitation has caused a 50% reduction in fish stocks, as is the case with some fish stocks in EU waters. However, since this happened gradually in the EU, there should be ample time find alternative employment.
[296] Discussed in chapter 4.
[297] Because Iceland is already in the EEA.
[298] Idem.
[299] See text and comments in respective chapters, particularly chapter 7 on options to counter the CFP attitude of overexploitation.
[300] Based on that skilled negotiators carry out accession negotiations and Iceland's demands / political position be well defined. (*Footnote 301 printed on next page*).

8 – 2 Conclusion

Table 33 on the previous page shows that although the Icelandic state treasury would lose money equivalent to 0.25% of the GDP on EU membership, the macroeconomic gains for the economy and net welfare change could be substantially larger than the expenses. When full effects of EU membership have taken place, some 10-20 years after accession and after adopting the Euro, the Icelandic GDP could be approximately 6.6% higher than if the country stayed outside the Union.[302] However, an exception is the Common Fisheries Policy (CFP) where it appears not feasible for Iceland to accept the CFP without some safeguards that marine biological advice on fish catch quotas being rigorously followed. Under the current circumstances, the EU CFP could in the long-term lead to macroeconomic losses possibly outweighing many of the other gains from EU membership. Nevertheless, we believe that it would be possible in EU accession negotiations to negotiate safeguards for the fisheries, i.e. first priority to be exempt from the CFP; if that is not acceptable to the EU, then that scientific advise on maximum sustainable yield be followed rigorously; and as a last resort Iceland would simply not use its full TACs[303] given to it from the EU, thereby preventing overfishing.[304]

Trying to answer the question if the EEA provides Iceland with all the economic and political advantages of EU membership, it appears that the answer is no, - it does not. The question has to be modified, however, from asking not only about advantages, but also about possible disadvantages of EU membership. From an economic perspective, the Icelandic state will have increased expenses through contributions to the EU common budget, beyond what Iceland will get back in subsidies. This amounts to the previously mentioned 0.25% of GDP. These contributions would have to be financed through increased direct or indirect taxes, which in itself is a negative factor when trying to stimulate economic growth. However, the monetary union will likely have a large positive effect by stimulating increased trade, more efficient production and less

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[301] This means that in a number of years, possibly two decades after accession, the Icelandic GDP would be approximately 6 ½ % higher than if Iceland stays outside the EU and EMU.

[302] Interestingly, Lejour et al. (2008) estimate that Croatia's GDP might increase by between 8% and 9% by joining the EU. We would like to add that Croatia's benefits from joining the EU would likely be larger than Iceland's benefits, because Croatia does not participate in the EEA and Croatia's current GDP per capita is substantially lower than Iceland's GDP.

[303] Total Allowable Catches.

[304] For a detailed discussion of the problems facing fisheries in Europe, see Chapter 7.

price discrimination. The Customs Union with a further removal of trade barriers would also produce net welfare gains, although the EEA already provides for a free movement of industrial goods. Notably the food and agricultural sector will be influenced deeply by opening the Icelandic market to the Common Agricultural Policy (CAP). There would be increased freedom in the trade of agricultural products from Europe, which would not only reduce food prices in Iceland, but also push many small farmers over to other more profitable occupations, which would increase net economic welfare. Since the average Icelandic farmer's productivity has for many decades been below society's average productivity, it is reasonable to expect that better paid jobs would be available. Iceland is a founding member of the World Trade Organisation (WTO) and the WTO will promote increased freedom in trade of agricultural products in the coming years. Joining the EU CAP will speed up the inevitable liberalisation process of the Icelandic agricultural sector, perhaps in a similar manner as happened in Finland when Finland joined the Union in 1995.

With the exception of the CFP in its current form, it appears that the macroeconomic benefit for the Icelandic society as a whole is considerably higher than the extra government expenses stemming from EU membership. The state would pay more to the EU than would come back from EU funds, but the net welfare increase and macroeconomic benefits in the form of lower food prices, reforming the agricultural sector, removing all intra-EU customs controls, and becoming a member of the European Economic and Monetary Union (EMU), appears to outweigh the state's extra expense by a considerable margin. EU membership would possibly influence ownership of fisheries companies, some of which might possibly be bought by foreign investors. However, new ownership is not likely to change much since all EEA (EU) citizens can invest and spend their profits wherever they want regardless of nationality. It should be reiterated that the main problem with the CFP is that EU fisheries ministers always decide to catch more fish from the ocean than nature can support in the long term. This has led to drastic reduction in catches in current EU waters, and the same might happen in Icelandic waters if fishing quotas are increased beyond sustainable yield. Considering that fisheries contribute to approximately 6% of Iceland's GDP, a damage to fisheries as an economic resource would have a very negative effect, at least until other jobs could be created. Fish has not disappeared from EU waters, but some stocks have been reduced to half of what they were a few decades ago. Unless the EU fisheries policy is changed, it can end with irreversible negative effects.

On the political front, it appears that membership of the EU would increase the influence on how EU legislation is formulated and voted for, as Iceland has to accept EU legislation anyway through the EEA treaty. The current situation, just to be consulted on new legislation and then having it imposed in the form of obligatory incorporation into national law is worse than participating fully in the formulation of new legislation as EU member states do. As a small member, Iceland could increase its bargaining power by aligning politics with other small members of a similar political and cultural background, notably the Nordic Countries (Finland, Denmark, Sweden and possibly in the future also Norway if Norway joins the EU). On the level of "high politics", meaning power and security, we find that at this early stage it is not clear how the EU Common Foreign and Security Policy (CFSP) will evolve. If the EU evolves into a giant superpower willing to throw its weight around in international politics, then some questions of political sovereignty and independence may arise, especially for smaller member states which have less influence and voting power than the big members.

We therefore conclude that there appears an economic advantage of Icelandic EU membership, with the possible exception of the CFP. But as mentioned in chapter 7, just to exclude EU membership without even trying to negotiate an acceptable deal, with emphasis on sustainable fisheries, would be a mistake. The requirement would be that scientific advice on fish catch quotas be closely followed regardless of contemporary economic or social demands. Alternatively, Iceland could pursue the option to sell its EU allocated catch quota on a gradually increasing price scale, thereby preventing catches from passing sustainable yield by simply putting the price too high on the part which exceeds sustainable yield. In that case, Iceland would in all probability substantially benefit from EU membership.

The outcome of EU accession negotiations is very important for an aspiring member state. Although the main rule is that new member states have to adjust themselves to the Union, it is possible to negotiate some exceptions, e.g. as Denmark did with foreign ownership of summerhouses, or agricultural support in the northernmost areas of the Union. It cannot be repeated too often that Icelandic negotiators and politicians will bear a huge responsibility in any accession negotiations[305].

[305] Mistakes can lead to large losses. An example is the EEA agreement with free flow of capital. Using the liberty of free flow of capital, many Icelandic banks had very large operations outside Iceland. When the main Icelandic banks collapsed in 2008, the Icelandic government, being the guarantor of parts of the deposits in accordance with European rules, was left with a financial burden far outweighing its domestic economics. When the EEA agreement was signed, nobody could foresee this.

Last but not least, if EU membership does not turn out according to expectations, there is nothing that prevents members from following Greenland's footsteps and leave the Union. The EU will not use force to keep members in the Union if they decide to leave in accordance with the provisions of the Lisbon Treaty. However, in such an unusual case that a member leaves the Union, there is no automatic guarantee that the departing state could join or renew the EEA arrangement, although it is likely that some cooperation arrangement between the Union and a departing state would be made, in a similar manner as the Union has agreements with many non-member states.

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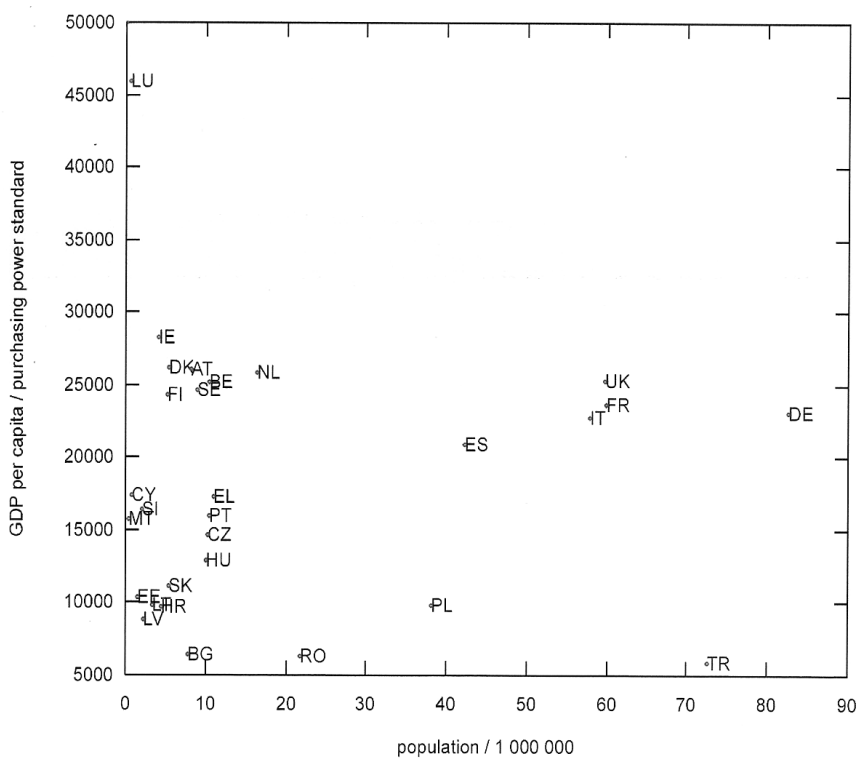
Annex 1

Graph showing current EU member states' and candidate countries' population and GDP per capita.



Source: Kaihsu Tai, University of Oxford (2004).
(Country abbreviations are shown in the list of abbreviations on pages 13-15)

It is important to draw attention to that most of the poorer EU member states have on the average a faster economic growth than the richer ones. In other words, the GDP per capita gap is diminishing. An oddity is also that tiny Luxembourg sticks out with an extremely high GDP per capita. This is explained by that about 60% of its workforce is foreign or cross-border workers (CIA World Factbook). Additionally, Luxembourg's banking secrecy attracts a lot of foreign capital from various sources, leading to an unusually large banking sector.

Annex 2

OECD definitions of agricultural Total Support Estimate (TSE), Producer Support Estimate (PSE), Consumer Support Estimate (CSE), and General Services Support Estimate (GSSE).

TSE (Total Support Estimate), PSE (Producer Support Estimate), CSE (Consumer Support Estimate), and GSSE (General Services Support Estimate), are OECD measurements of transfers to the agricultural sector. TSE and PSE are among the most commonly used measurements when comparing agricultural support between countries. In 1998 OECD replaced the term "subsidy equivalent" by "support estimate". At the same time TSE, PSE, CSE and GSSE, were slightly redefined. The new definitions are (OECD Directorate for Food, Agriculture, and Fisheries: Agricultural Electronic Data Products, Producer and Consumer Support Estimates. OECD database (1986-2006)):

(1) Total Support Estimate (TSE): An indicator of the annual monetary value of all gross transfers from taxpayers and consumers arising from policy measures which support agriculture, net of the associated budgetary receipts, regardless of their objectives and impacts on farm production and income, or consumption of farm products.

(2) Producer Support Estimate (PSE): An indicator of the annual monetary value of gross transfers from consumers and taxpayers to support agricultural producers, measured at farm gate level, arising from policy measures which support agriculture, regardless of their nature, objectives or impacts on farm production or income. The Producer Support Estimate (PSE) measures the annual monetary transfers to farmers from three broad categories of policy measures that:

• Maintain domestic prices for farm goods at levels higher (and occasionally lower) than those at the country's border (market price support).

• Provide payments to farmers based on, for example, the quantity of a commodity produced, the amount of inputs used, the number of animals kept, the area farmed, an historical (fixed) reference period, or farmers' revenue or income (budgetary payments).

• Provide implicit budgetary support through tax or fee reductions that lower farm input costs, for example for investment credit, energy, and water (budgetary revenue foregone).

(3) Consumer Support Estimate (CSE): An indicator of the annual monetary value of gross transfers to (from) consumers of agricultural commodities, measured at the farm gate level, arising from policy measures

which support agriculture, regardless of their nature, objectives or impacts on consumption of farm products.

(4) General Services Support Estimate (GSSE): An indicator of the annual monetary value of gross transfers to general services provided to agriculture collectively, arising from policy measures which support agriculture, regardless of their nature, objectives and impacts on farm production, income, or consumption of farm products.

The **pre-1998** definitions of PSE and CSE were (Cahill and Legg, OECD, Paris, (1989)):

PSE is (was) an indicator of the value of the transfers from domestic consumers and taxpayers to producers resulting from a given set of agricultural policies at a point in time. Thus the PSEs are (were) aggregate measures of the total monetary value of the assistance to output and inputs on a commodity-by-commodity basis, associated with agricultural policies. Five categories of agricultural policy measures are (were) included in the OECD calculations of PSEs:
(1) Market Price Support. All measures which simultaneously affect producer and consumer prices.
(2) Direct Payments. All measures which transfer money directly to producers without raising prices to consumers.
(3) Reduction in Input Costs. All measures which lower input costs with no distinction being made between subsidies to capital and those to other inputs.
(4) General Services. Measures which in the long term reduce costs but which are not directly received by producers.
(5) Other. Other indirect support, including the main elements of sub-national subsidies (i.e. measures funded nationally by member states in the case of the EC or regionally in the case of other countries) and taxation concessions.

The **CSE** is (was) an indicator of the value of transfers from domestic consumers to producers and taxpayers arising from a given set of agricultural policies at a point in time. The CSE measurement, in the OECD calculations, is (was) not intended to capture all policies that affect consumption but is (was) limited to the effect on consumers of agricultural policies only. There is (was) a very close relationship between the PSE and CSE. All market price support policies that create a wedge between domestic and world prices raise consumer prices: a positive transfer to producers from consumers is a subsidy to producers and a tax to consumers, and vice versa, a negative transfer to producers from consumers is a tax on producers and a subsidy to consumers.

Annex 3

Employment in aquaculture (fish farming) in the EU.

Although aquaculture is somewhat outside the scope of this study, it is a growing trend and we find interesting to report on the number of people employed in it. However, aquaculture is not necessarily a solution to protecting wild fish as the fish being bread are sometimes fed on products from wild fish captures.

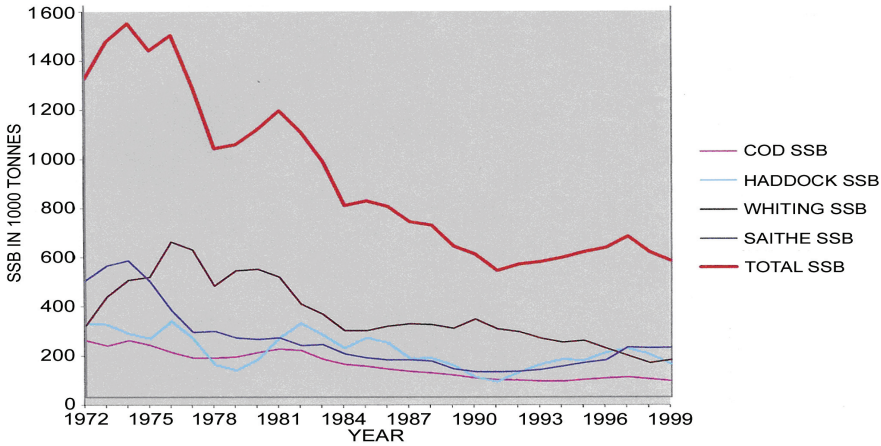
Year	1998	1999	2000	2001	2002	2003	2004
Austria	:	:	:	:	:	:	:
Belgium	:	:	:	:	:	:	:
Cyprus	260	265	243	247	226	188	127
Czech Republic	2100	1992	1944	1842	2167	2154	:
Denmark	:	:	825	853	854	729	:
Estonia	68	:	:	103	94	101	:
Finland	1985	1985	1985	1985	1985	1558	1492
France	:	:	:	23899	21566	:	:
Germany	:	:	:	:	:	:	:
Greece	2947	3194	3539	4141	4145	4166	:
Ireland	800	:	:	:	:	:	:
Italy	:	:	:	:	:	:	:
Latvia	:	241	239	316	327	366	379
Lithuania	:	:	:	500	:	:	:
Hungary	1150	1200	1400	:	:	:	:
Malta	150	150	108	:	75	:	:
Netherlands	:	:	:	:	:	:	:
Poland	:	:	:	:	:	:	:
Portugal	:	:	:	:	:	:	:

Year	1998	1999	2000	2001	2002	2003	2004
Slovakia	:	:	215	244	:	:	:
Slovenia	:	:	:	154	190	195	229
Spain	:	:	:	:	:	:	:
Sweden	:	:	:	:	:	:	:
United Kingdom	:	:	:	:	:	:	:

Source: European Commission 2005. The blank spaces mean that data has not been reported.

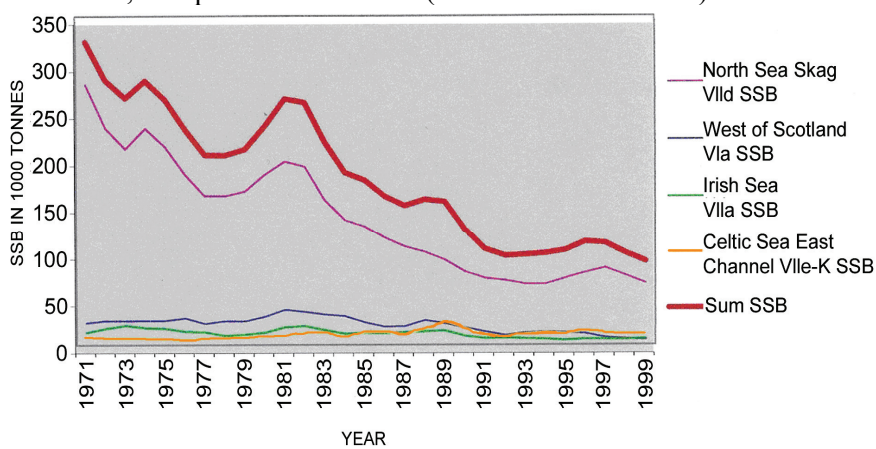
Annex 4. The development of the fisheries resource in EU waters.

Total spawning stock biomass (SSB) of cod, haddock, whiting, and saithe, in the North Sea, Skagerak, and the Eastern Channel (in thousands of tonnes).



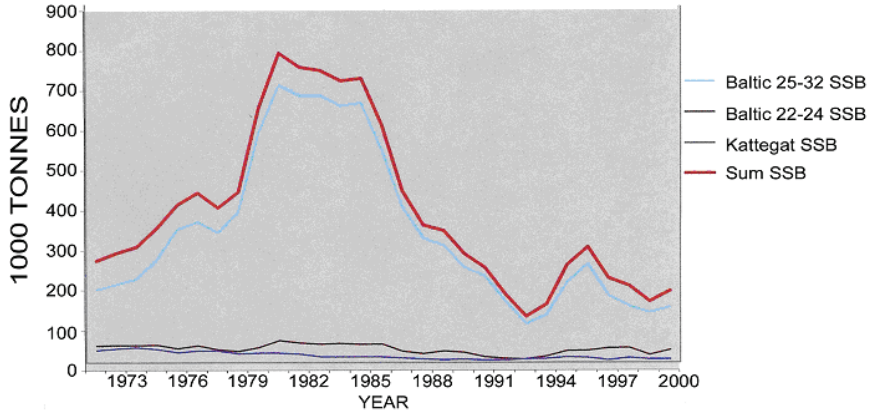
Source: EU Green Paper on the future of the CFP, Volume II (2001).

Development of total spawning stock biomass (SSB) for all cod stocks in EU waters, except in the Baltic Sea (in thousands of tonnes).



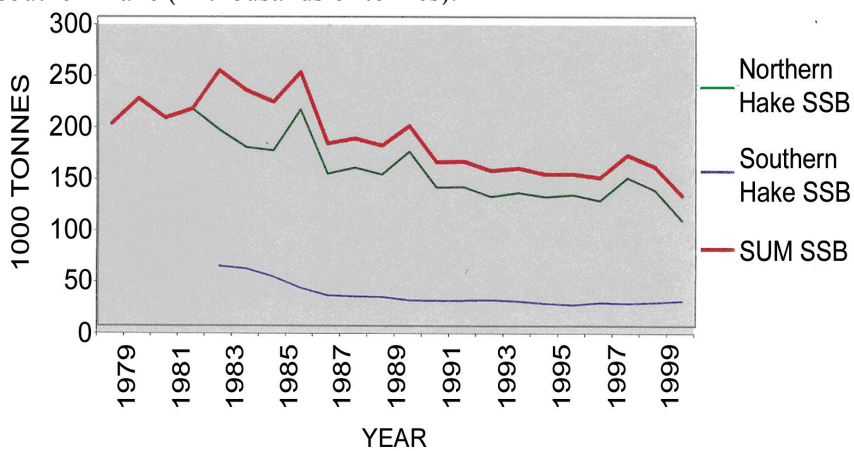
Source: EU Green Paper on the future of the CFP, Volume II (2001).

Development of spawning stock biomass (SSB) for cod stocks in the Baltic and Kattegat (in thousands of tonnes).[306]



Source: EU Green Paper on the future of the CFP, Volume II (2001).

Development of the spawning stock biomass (SSB) of northern and southern hake (in thousands of tonnes).

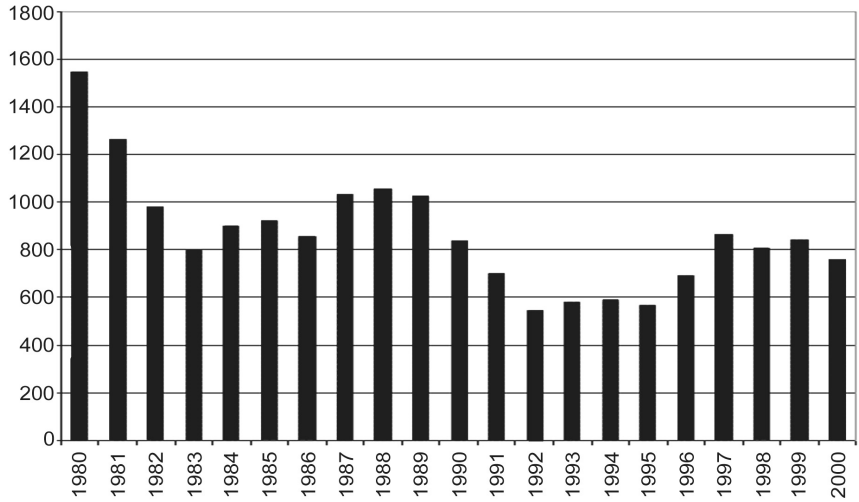


Source: EU Green Paper on the future of the CFP, Volume II (2001).

[306] We have not found an explanation for the drastic increase in the cod stocks in the Baltic in the early 1980s, but we suspect that difficulties or errors in estimation may be a factor.

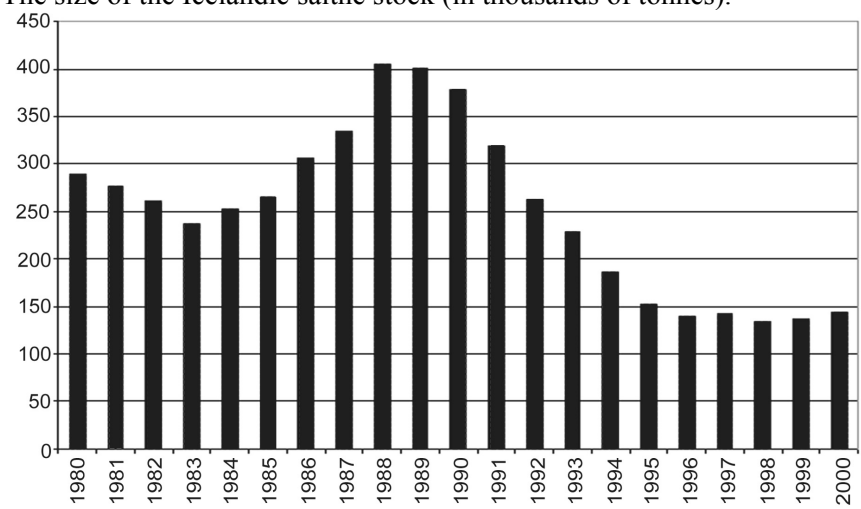
Annex 5. The development of the fisheries resource in Icelandic waters.

The size of the Icelandic cod stock (in thousands of tonnes).



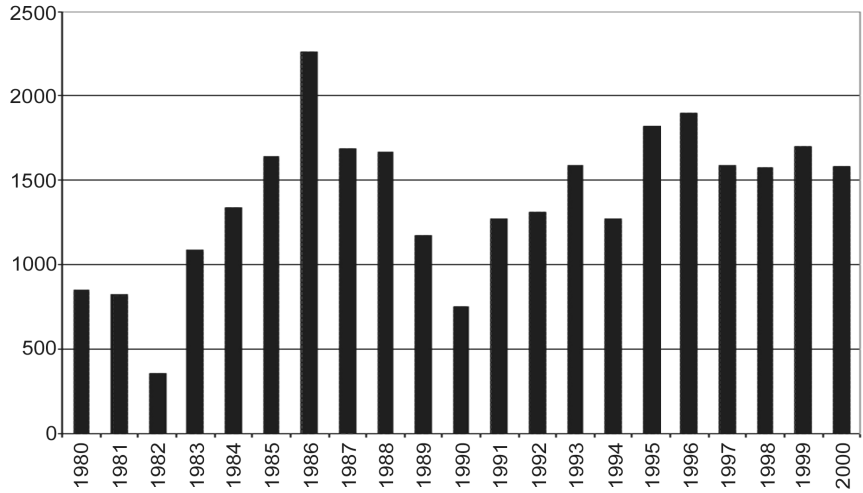
Source: Agnarsson (2000)

The size of the Icelandic saithe stock (in thousands of tonnes).



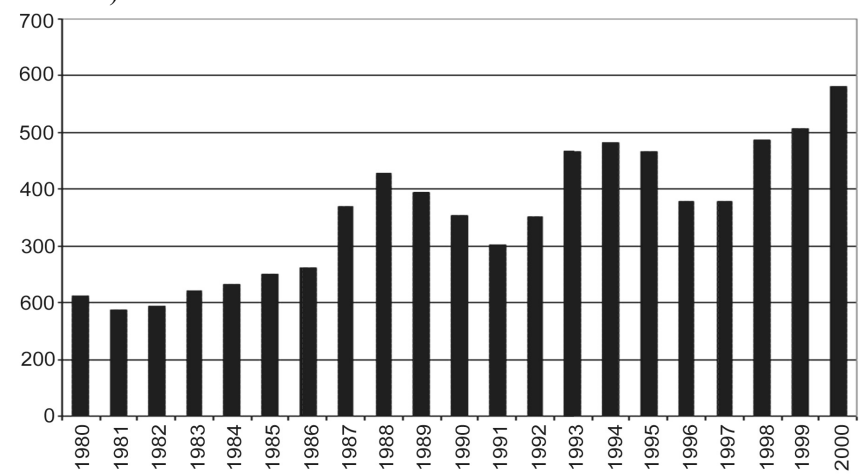
Source: Agnarsson (2000)

The spawning stock biomass (SSB) of the Icelandic capelin (in thousands of tonnes).



Source: Agnarsson (2000)

The spawning stock biomass (SSB) of the Icelandic herring (in thousands of tonnes).



Source: Agnarsson (2000)

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Samenvatting in het Nederlands (Summary in Dutch)

IJsland is gedurende vier decennia lid geweest van de Europese Vrijhandelszone (EFTA) en gedurende 16 jaar van de Europese Economische Ruimte (EEA), maar tot voor kort is over lidmaatschap van de Europese Unie (EU) nooit serieus gedebatteerd in de IJslandse politiek. De EEA kan worden gezien als een geassocieerd lidmaatschap van de EU. Onder de huidige regeling neemt IJsland deel in het vrije verkeer van kapitaal, arbeid, diensten en industriële goederen van de EU, terwijl er wordt samengewerkt op het gebied van concurrentiebeleid, regelingen voor staatssteun, sociaal beleid, consumentenbescherming, milieu, samenwerking in onderzoek, onderwijs, toerisme, de audiovisuele sector en civiele bescherming. Echter, IJsland neemt niet deel aan de gemeenschappelijke EU visserijbeleid, noch aan het gemeenschappelijke landbouwbeleid, de Economische en Monetaire Unie (EMU) en de douane unie.

Deze dissertatie analyseert de consequenties van een volledig EU lidmaatschap voor de IJslandse politieke economie. Het geeft een overzicht van de EU, de EFTA en de EEA, met een uitputtende discussie van die aspecten van de EU die niet worden afgedekt door de EFTA overeenkomst. Specifieke aandacht wordt gegeven aan de consequenties van deelname aan de EMU en het gemeenschappelijke landbouw- en visserijbeleid. De redenen voor de aanzienlijke economische steun aan de landbouwsector worden bediscussieerd. De studie laat ook zien dat er manieren zijn om de meest negatieve effecten van het gemeenschappelijke visserijbeleid op het IJslandse EU-lidmaatschap te vermijden.

De uitkomsten volgen uit een kosten-baten analyse en tellen de verschillende effecten van EU-lidmaatschap bij elkaar op. De belangrijkste resultaten zijn: (1) de IJslandse schatkist zal meer middelen bijdragen aan de EU financiering dan dat er direct terugkomen, (2) de effecten van het toetreden tot de EU douane unie zijn relatief klein want de EEA is al een vrijhandelszone, (3) IJsland is op dit moment niet in een positie om zich aan te sluiten bij de EMU, maar de effecten zullen zeer positief zijn zodra dat wel het geval zal zijn, (4) het gemeenschappelijke landbouwbeleid zal leiden tot lagere voedselprijzen en tegelijkertijd de onvermijdelijke hervorming van de landbouwsector afdwingen en, tenslotte, (5) deelname aan het gemeenschappelijke visserijbeleid is alleen acceptabel als er garanties tegen overbevissing in het toetredingsverdrag komen. Aannemende dat er overeenstemming is over de bescherming van de visstand, zullen de lange termijn voordelen van EU lidmaatschap de kosten overstijgen, waarbij het bruto binnenlandse product naar schatting 6-7% hoger zal uitkomen dan wanneer IJsland buiten de EU blijft. Deze relatieve toename zal niet direct plaatsvinden, maar een aantal jaren in beslag nemen. De beslissing om tot de EU toe te treden is uiteindelijk een politieke keuze en dit proefschrift probeert er toe bij te dragen dat deze keuze zo gefundeerd mogelijk zal zijn.

Summary in English

Iceland has been a member of the European Free Trade Association (EFTA) for four decades and a member of the European Economic Area (EEA) for 16 years, but European Union (EU) membership has not been seriously discussed in Icelandic politics until recently. The EEA can be considered as an associate membership of the EU. Under the current arrangement, Iceland participates in the EU free flow of capital, persons, services and industrial goods, along with cooperation in competition rules, regulations on state aid, social policy, consumer protection, environment, cooperation in research, education, tourism, the audiovisual sector, and in civil protection. However, Iceland does not participate in the EU Common Fisheries Policy (CFP), the EU Common Agricultural Policy (CAP), the European Economic and Monetary Union (EMU), or in the EU Customs Union.

This study analyses the effects of full EU membership on the Icelandic *Political Economy*. It gives an overview of the EU, EFTA and the EEA, with thorough discussion of those aspects of the EU that are not covered by the EEA agreement. Particular attention is devoted to studying the effects of the monetary union, agricultural policy and fisheries policy. The reasons for widespread economic support to agriculture are discussed. The study also points out that there are ways to avoid the most negative consequences of Icelandic EU membership associated with the EU CFP.

The conclusions are in line with a cost benefit analysis and add up the various aspects of EU membership. The main findings are that (1) the Icelandic treasury will contribute more to EU funds than will be returned directly from the EU, (2) the effects of joining the EU Customs Union are relatively small because the EEA is a free trade area, (3) Iceland is currently not in a position to join the EMU, but its effects would be very positive when that time comes, (4) the CAP will lead to lower prices on food to the benefit of consumers and at the same time force unavoidable economic reform in agriculture, (5) and finally that the CFP can only be accepted if there are safeguards in Iceland's accession treaty against overexploitation of fish stocks. Provided there is agreement on protection of fish stocks, the long-term benefits of Union membership will outweigh the expenses, leading to a gross domestic product being 6-7% higher than if Iceland stays outside the EU. This would not be an immediate change, but a gradual development taking several years. A decision to join the EU is, in the end, a question of political choice and this study is intended to help make that choice as informed as possible.

Útdráttur á íslensku (Summary in Icelandic)

Ísland hefur átt aðild að Fríverslunarsamtökum Evrópu (EFTA) í fjóra áratugi og verið aðili að evrópska efnahagssvæðinu (EES) í 16 ár, en aðild að Evrópusambandinu (ESB) hefur ekki komið til alvarlegrar umræðu í íslenskum stjórnmálum fyrr en nýlega. Líta má á aðild Íslands að EES sem aukaaðild að ESB. Í núverandi samstarfi er Ísland aðili að frjálsu flæði fjármagns, fólks, þjónustu og iðnvarnings, auk samvinnu um samkeppnisreglur í viðskiptum, reglur um ríkisstyrki, félagsmál, neytendavernd, umhverfismál, almannavarnir, ferðamál, vísindi, menntun og menningarmálefni. Samstarfið nær hinsvegar ekki til sameiginlegrar fiskveiðistefnu ESB, sameiginlegrar landbúnaðarstefnu ESB, myntbandalags Evropu, né til tollabandalagsins.

Í ritgerð þessari er fjallað um stjórnmála-hagfræðileg (*political economy*) áhrif fullrar Evrópusambandsaðildar á Ísland. Ritgerðin veitir yfirsýn yfir ESB, EFTA og EES með víðtækri umfjöllun um þá þætti ESB sem ekki falla undir EES samninginn. Sérstök áhersla er lögð á að kanna þýðingu myntbandalagsins, landbúnaðarmálefni og fiskveiðistefnu. Ástæður fyrir stuðningi við landbúnað eru krufnar. Einnig er vakin athygli á leiðum til forðast neikvæðustu afleiðingar sameiginlegrar sjávarútvegstefnu ESB ef Ísland ákveddi að ganga í bandalagið.

Niðurstöðurnar byggja á mati á kostnaði og ábata af öllum hliðum ESB aðildar. Meginatriðin eru að (1) íslenska ríkið muni leggja meiri fjámuni til sjóða ESB heldur en ESB mundi greiða á móti til Íslands, (2) áhrifin af inngöngu í tollabandalagið verði frekar lítil vegna þess að EES er fríverslunarbandalag, (3) Ísland er eins og á stendur ekki í aðstöðu til að taka þátt í myntbandalaginu, en þegar þar að kæmi munu áhrifin verða mjög jákvæð, (4) aðild að sameiginlegri landbúnaðarstefnu ESB mun leiða til lægra matvælaverðs til hagsbóta fyrir hinn almenna neytenda en krefst um leið endurskipulagningar og hagræðingar innan landbúnaðarins, og (5) að sameiginleg sjávarútvegstefna ESB er einungis ásættanleg ef í aðildarsamningi eru tryggð ákvæði gegn rányrkju. Ef gengið er út frá að samkomulag náist um nauðsynlega verndun fiskistofna, mun hagnaðurinn af ESB aðild til langs tíma litið vera meiri en kostnaðurinn þannig að verg þjóðarframleiðsla yrði 6-7% hærri en ef Ísland stæði utan sambandsins. Breytingar verða þó ekki strax, heldur er hér um þróun að ræða sem getur tekið allmörg ár. Endanleg ákvörðun um inngöngu í Evrópusambandið er spurning stjórnmálalegs eðlis og þessari ritgerð er ætlað að auðvelda slíka ákvörðunartöku.