A TALE OF TWO CRISES: BIO-SOCIO-ECONOMIC COMPARISON OF ICELAND´S HERRING COLLAPSE IN 1968 AND BANKING COLLAPSE IN 2008

Thorir Sigurdsson, University of Akureyri, thorir@unak.is

ABSTRACT

40 years ago the Atlanto-Scandian herring stock collapsed with severe consequences for Iceland´s monotonic economy at that time. Two years ago the international credit crisis brought the country´s largest banks to insolvency, which shocked the whole economy with butterfly effects in neighbouring countries. The paper begins with an overview of the Icelandic economy, then models the herring collapse and finally describes and compares the effects, negative and positive, of these two crises from an economic, sociological and political point of view. After 1968 gross domestic product and currency rate decreased, but unemployment, emigration and inflation increased. Some economic indicators recovered surprisingly soon because of new resources, diversified industries, an extension of the exclusive economic zone and improved fisheries management, but high inflation and political instability persisted. The immediate aftermath of 2008 is similar, however starker, but no windfall recovery is to be expected. The fisheries will reach culmination, although added value is potential, and exploitation of renewable energy resources may take their place as the most important industry. Rapid globalization of Iceland´s financial activities during the last decade created complications and controversies over foreign debts, which could have long-lasting impeding consequences and delay the necessary reconstruction of fisheries management, industrial companies and social institutions. An attempt will be made to predict the uncertain future economic development according to national and international statistics.

Keywords: Herring stocks, population dynamics, overfishing, financial stability, credit crisis.

GENERAL INTRODUCTION

Iceland, then part of the Danish Kingdom, was probably one of the poorest countries in Europe when the herring era began in the 20th century. Its population had fluctuated around 50,000 for centuries until the middle of the 19th century, reached 100,000 in 1926; 200,000 in 1968 and 300,000 in 2007[1], that is only 0.005% of the global population. The land area is relatively large: 100,000 km^2 and the exclusive economic zone 760,000 km^2. Primitive agriculture and artisanal fishery had been the main industries since the Norwegian settlement in the 9th century. The industrial revolution did not reach the country until engines were introduced in fishing boats after 1900 and factories built to produce herring oil and meal. Today Iceland is a prosperous country. A few statistics confirm that: In 2009 the GDP per capita was USD 38,000 (purchasing-power-parity), compared to USD 30,000 on average in the European Union.[2] Mean annual economic growth was 4.0 per cent 1945-2008,[1] but in 2009 growth was more negative than in most other western countries (-6.5% compared to -4.0% in the European Union), but Iceland will still be well-off. The soil may not be fertile and the climate is rough, but the land has rich water and energy resources and the sea is abundant. The country has also a very high 'human development index' in UN´s statistics which includes more than pure economic factors such as life expectancy, infant mortality, equality and education.[3] (The HDI, however, has been criticized for being 'too Scandinavian'.)

The fishing industry was the basis for economic development in the 20th century. The total catch was about 50,000 tonnes in the beginning, grew gradually to 300,000 in the 1930s, reached a peak of one million in the 1960s and has fluctuated between one and a half and two million tonnes since 1980. Approximately one third of the catch is demersal (e.g. cod, haddock, saithe, redfish, flatfishes) and two thirds pelagic (e.g. herring, capelin, blue whiting , mackerel). In 2005 Iceland´s share of the global catch was almost two per cent. Fishing and fish processing constitute about nine per cent of the gross domestic product and marine products forty per cent of the value of exported goods, although these ratios have been gradually decreasing with the diversification of the economy. An overview of Icelandic fisheries can be found in a booklet by Anonymous (2008), published by the Ministry of Fisheries and Agriculture.[4]

HERRING INTRODUCTION

As a result of new fishing techniques in the 1950s all major herring stocks in the North-east Atlantic collapsed in the late 1960s or early 1970s (Jakobsson, 1985) but the most dramatic decline was that of the Norwegian-Icelandic stock (sometimes called Atlanto-Scandian herring), which was one of the largest in the world. The stock spawned along the coast of Norway in early spring, migrated to Icelandic waters for feeding in the summertime and overwintering, but a part of the stock stayed and spawned in Icelandic waters. That pattern changed completely in the mid 1960s (Jakobsson, 1996). The catch in 1971 was only twenty thousand metric tons in contrast with the record of two million tonnes in 1966 and the spawning stock declined from more than ten million tonnes to ten thousand tonnes in twenty years (Toresen and Østvedt, 2000). Economic opportunism, environmental deterioration and political mismanagement contributed to overfishing of the stock which surprised both fishermen and scientists because catches stayed high almost until the very end as Figure 1 demonstrates for the second half of the 20th century.

The present state of the Norwegian spring-spawners is relatively stable after more than twenty years of recovery with a stock size about ten million tonnes and a total catch of one million tonnes per year. Icelandic spring-spawners are extinct, but there is a smaller summer-spawning stock around Iceland with a stock size about half a million tonnes and a yearly catch of amply one hundred thousand tonnes.

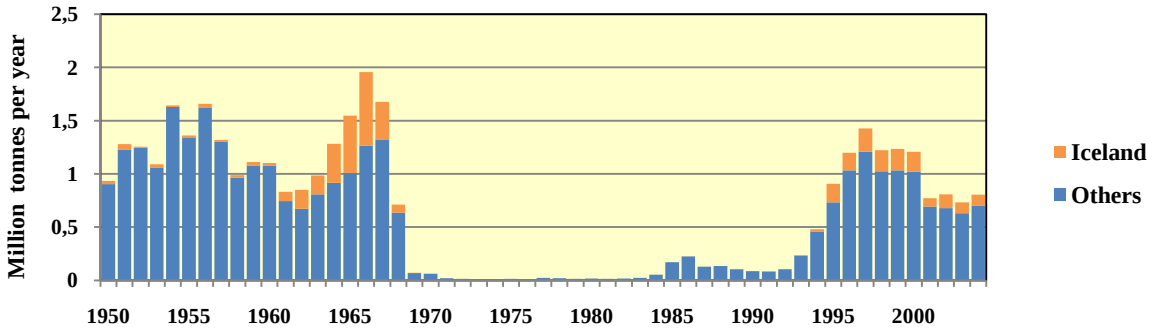

Figure 1. *Total landings of Norwegian-Icelandic herring. (Source: ICES [5]; MRI [6])*

Fishing for herring has a long history in northern Europe. For centuries salted herring was a staple food and commercial product with a widespread distribution system including quality control. The traditional fishing grounds were in the Baltic, the North Sea, around Iceland and along the shores of Scandinavia and Russia to the White Sea, finally extending far into the high seas of the North Atlantic Ocean. The herring fishery has always been characterized by fluctuations; sometimes abundant, sometimes scarce. The French naturalist Lacépède wrote at the end of the eighteenth century in his *Histoire naturelle des poissons:* '*Le hareng est une des ces productions dont l´emploi décide de la destinée des empires*'. Some of these 'empires' were Germany (the Hanseatic League) in the Baltic from the 12th century, Holland and Britain in the North Sea from the 15th century, Sweden in Skagerak in the 18th century and finally Norway in the Atlantic in the 20th century (Sahrhage and Lundbeck, 1992). Iceland was not a herring empire except for a few years in the 1960s.

Until 1950 Icelandic catches fluctuated with an increasing trend, sometimes exceeding 200 thousand metric tons per year. Then the herring changed their behaviour and became difficult to find, but new technology arrived - sonar and power block - which revolutionized the fishery in a remarkably short time. Oceanographic indicators were favourable and lucrative markets for salted herring, oil and meal motivated entrepreneurs. Yield went up to unprecedented levels (more than half a million tonnes per year), but only for a few years. At the same time other fleets were active in the fishery, especially from Norway and Russia (then the Soviet Union), bringing total landings close to two million tonnes in 1966. Also, recruitment failed and the catch crashed in 1968 and 1969. Nevertheless commercial fishing was not banned until 1976 (Sætersdal, 1980). The stock did not recover until twenty years later, but has only recently and partially returned to Icelandic waters after staying close to the Norwegian coast. Figure 2 shows coarsely hundred years of Iceland´s herring catches and development of the spring-spawning stock.

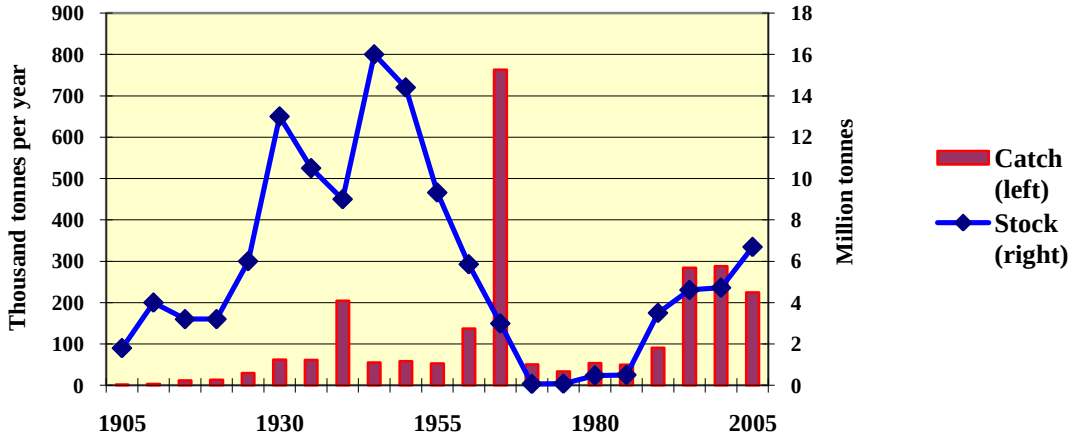

Figure 2. *100 years* of *Iceland´s herring catches and development of the spring-spawning stock (Sources: Toresen and Østvedt, 2000; ICES [5]; MRI [6])*

ICELANDIC HERRING FISHERY DATA

The following table is calculated from records published by the *Fisheries Association of Iceland* in their magazine *Aegir* and the *Computing Office of the Fishing Industry*, accessible in printed format at the *National Archives of Iceland*,[7] the *International Council for the Exploration of the Sea*[5] and Iceland´s *Marine Research Institute*.[6]

Year	Building	Number of	Mean	Mean days	Iceland´s	Total	Stock	Sample	Revenue	Cost	Profit	Profit	Icel. Effort
A.D.	cost index	vessels (N)	GRT (G)	at sea (D)	Yield/ktons	Yield/M tons	M tons	size (n)	R/ M ISK	C/ M ISK	Π/ M ISK	P / %	MGD
1955	0,99	132	73	50	39,5	1,24	7,54	54	12,95	15,38	-2,43	-18,8	0,48
1956	1,04	187	77	47	81,7	1,5	9,23	59	19,79	20,56	-0,77	-3,9	0,68
1957	1,18	234	77	54	100,7	1,23	8,36	76	23,18	27,16	-3,98	-17,2	0,97
1958	1,28	241	79	65	106,3	0,86	7,16	53	18,99	24,22	-5,24	-27,6	1,24
1959	1,38	224	73	74	184,4	1,03	6,04	36	26,62	25,83	0,79	3,0	1,21
1960	1,47	258	81	68	144,5	0,94	4,9	67	26,76	44,85	-18,09	-67,6	1,42
1961	1,62	220	89	67	296,5	0,7	3,59	48	60,21	57,31	2,91	4,8	1,31
1962	1,82	224	100	75	450,4	0,82	2,81	52	103,10	97,77	5,33	5,2	1,68
1963	1,93	226	109	87	281,8	0,77	2,26	69	101,72	111,24	-9,52	-9,4	2,14
1964	2,23	233	133	97	468,9	1,22	2,77	98	334,45	368,30	-33,85	-10,1	3,01
1965	2,57	218	145	163	608	1,42	2,94	93	616,02	545,53	70,49	11,4	5,15
1966	2,99	185	192	174	716,4	1,75	2,57	83	654,44	613,87	40,57	6,2	6,18
1967	3,1	153	230	172	374,6	1,14	1,17	71	313,14	411,45	-98,31	-31,4	6,05
1968	3,39	103	258	134	79,5	0,28	0,226	64	268,62	349,02	-80,40	-29,9	3,56
1969	4,2	20	260	30	4,2	0,03	0,083	49	330,57	351,18	-20,61	-6,2	0,16

Monetary unit is the Icelandic *krona* (ISK) in current value millions and the unit of effort is one million gross register tonnage (GRT) multiplied by the number of days at sea. Financial data (R, C, Π, P) refer to the samples only. In 1969 the total herring fleet was 87 vessels but only 20 were active in the spring-spawning stock fishery. That year will be dropped in some of the following calculations and estimations.

MODELLING THE HERRING COLLAPSE

In the mid 1960s the International Council for the Exploration of the Sea (ICES) had assessed the size of the stock from the early 1950s (Anonymous 1964) and noticed a considerable decline. Although fishermen and biologists expected the stock to rise again to previous heights – perhaps a few years later – it should have been tempting for a mathematician to specify a time series model by combining trigonometric and exponential functions: $S=Ae^{Bt}[1+Csin(Dt)]$, where S is the stock size and t time, to describe the past development of the stock, estimate the four parameters: A, B, C, D and extrapolate into the future. The sinus function is a simplification of oscillations which are common for many phenomena in nature while the exponential function captures the decaying effect of human intervention – fishing in this case.

After estimating the four parameters statistically by the Gaussian least squares method using data from 1953 to 1963, which resulted in *A=12.0 million tonnes; B=–0.120 per year; C=0.421; D=0.603 per year*, the development of the stock could have been predicted. In fact, reality was even more abrupt than the pessimistic outlook of a nonviable minimum ten years later as Figure 3 shows. More accurate stock assessment by virtual population analysis (VPA), not available until several years after the collapse, showed the same trend with some modifications (Dragesund, 1980). A more mathematical approach to the model can be found in Sigurdsson (2006a).

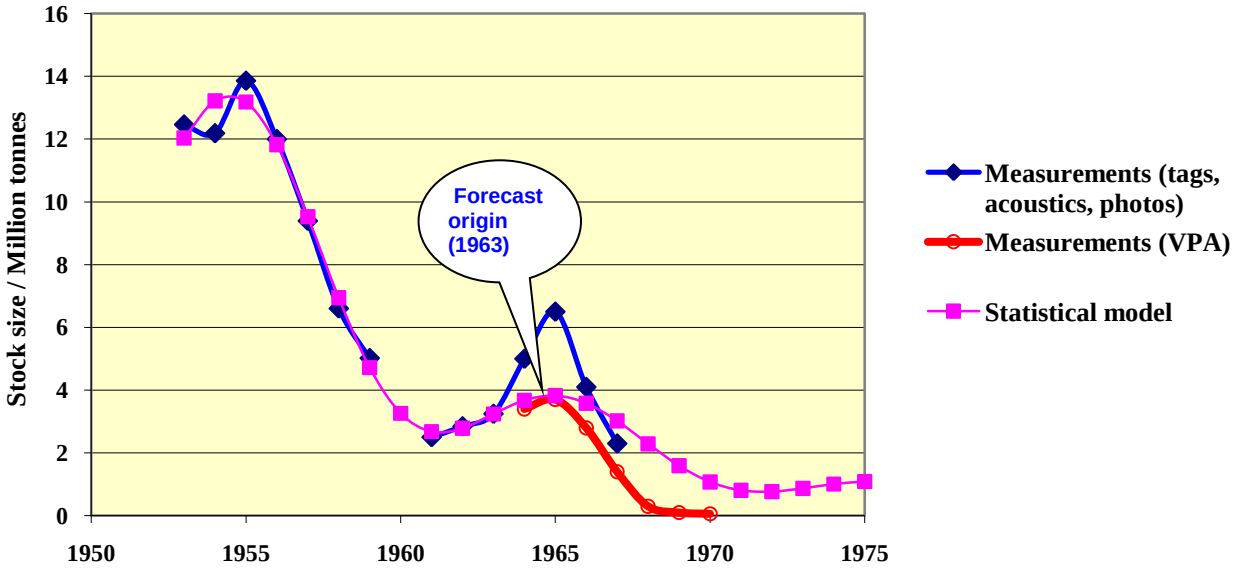

Figure 3. *Measurements and model calculations of the herring collapse*

It may seem futile to predict the past because it is impossible to change it. Nevertheless is it interesting to speculate what could have happened if this analysis had actually been done in due time. Would anyone have believed our hypothetical mathematician and followed his advice to reduce catch or effort already in 1964? At that time there was open access in most fisheries and in this case fishing was not banned until 1976 – so late that the stock did not recover for the next twenty years.

Eventually, the experience of the mismanagement of the Norwegian-Icelandic herring taught us a lesson. Even today there is a controversy between scientists, fishermen and politicians over how to manage fish stocks in North-Atlantic waters – and elsewhere in the world. Maybe a mathematical prophet in the future will have a responsible audience next time a collapse is imminent.

ESTIMATING THE YIELD FUNCTION

The Cobb-Douglas production function is common in economics. If their idea is applied to the Icelandic herring fishery data an appropriate model is: $Y=a\cdot E^{b}\cdot S^{c}\cdot e^{u}$ where E is effort, S stock size and u a stochastic error term. The parameters a, b, c were estimated after logarithmic linearization:

$$\underset{(10.8)}{ln(Y)=4.02}+\underset{(5.47)}{1.26ln(E)}+\underset{(1.90)}{0.35ln(S)}+u$$

The numbers in parentheses are t-values which confirm high significance for a and b, but medium for c. The estimated yield function is therefore (with the same units as in the data table above):

$$\hat{Y} = 55.8 \times E^{1.26} \times S^{0.35}$$

This approach has previously been applied to the North Sea herring fishery (Bjørndal and Conrad, 1987) with similar results ($b>1$ and $c<1$).

ESTIMATING STOCK PARAMETERS

By applying the simple but common Verhulst growth function: $G=rS(1-S/K)$ where S is stock size, r a constant (intrinsic growth rate) and K another constant (carrying capacity of the habitat) and combining it with the surplus production model: $\Delta S=G-Y$ and including the yield function estimated earlier: $Y=56\cdot E^{1.26}\cdot S^{0.35}$ the estimates become: $r=0.2$ *per year* and $K=13$ *million tonnes*. These results are credible but not very significant so that in the following graph $K=16$ is used which is the highest stock calculated later (Toresen and Østvedt, 2000). Figure 4 compares actual total catch and sustainable yield ($Y=G$) and shows obvious overfishing. (No wonder that the stock crashed!)

$$G = 0.2 \times r \times S\left(1 - \frac{S}{16}\right)$$

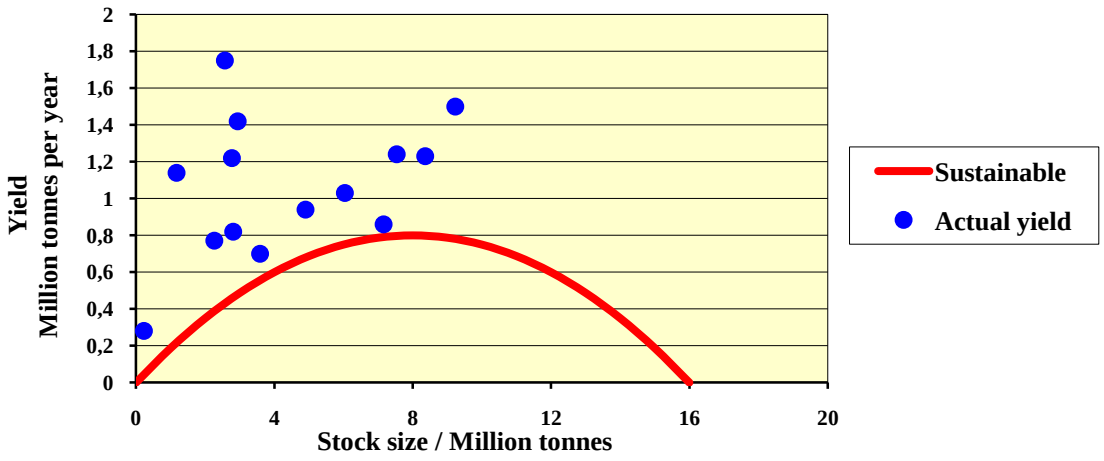

Figure 4. *Actual total yield and sustainable yield from the Norwegian-Icelandic herring stock*

FLEET DYNAMICS

Economic theory claims that in an open access fishery market forces should control the effort: vessels enter if there is profit, exit in the case of loss. To test this hypothesis a linear model was specified:

$$\frac{\Delta E_i}{E_i} = k(P_i - P_0) + u$$

where the effort E is defined as the product of the total number of vessels participating in the fishery, their mean gross register tonnage and the mean number of days at sea. The lag $\Delta E_i = (E_{i+1} - E_i)$ is the effort difference between the current year $(i+1)$ and the previous year (i). P_i is profit as a percentage of revenue in a sample of annual accounts: $P=(R-C)\cdot 100/R$ where the revenue is $R=p\cdot Y$ and the cost $C=c\cdot E$; p is unit price and c unit cost. P_0 is some threshold value, which may be interpreted as an opportunity cost, and k a constant. The model simply states that the relative change in effort each year is proportional to the profit margin the year before above (or below) the threshold. Estimation of this model with the data in the table above gives moderately significant results with the equation:

$$\frac{\Delta \hat{E}_i}{E_i} = 0.233 + 0.0086 \times P_i$$

$$(1.89) \quad (1.69)$$

with a correlation coefficient $R=0.44$ and t-values in parentheses. The estimates of the constants are: $k = 0.0086$ and $P_0 = -0.233/0.0086 = -27\%$ *per year*. This result was published at a previous IIFET conference (Sigurdsson, 2006b).

The estimated model seems to be a paradox since the threshold value is negative, meaning that the fishery continued to expand in spite of negative profits most of the time. This peculiar result can be explained by characteristic factors of the abnormal monetary policy in Iceland at that time: government intervention, inflation, negative real interest, subsidized funds and controlled exchange rate of the krona.

At this point it is tempting to ask whether the collapse could have been avoided. The answer, of course, depends on many assumptions. One possibility is to simulate the time path in stock-effort phase-space by combining the estimated models of the yield function, stock parameters and fleet dynamics and manipulate with the threshold value, disguising a resource tax in the open access scenario. Starting from suitable initial values: S_0*=7.5 million tons*; E_0*=3.4 million GRT-days* and selecting P_0*=+19%, a* limit cycle is reached around a bioeconomic equilibrium point, explained by Hannesson (1993): $S\approx 7$; $E\approx 5$ [Figure 5]. The path, however, is very sensitive to the initial values and the parameters in the models.

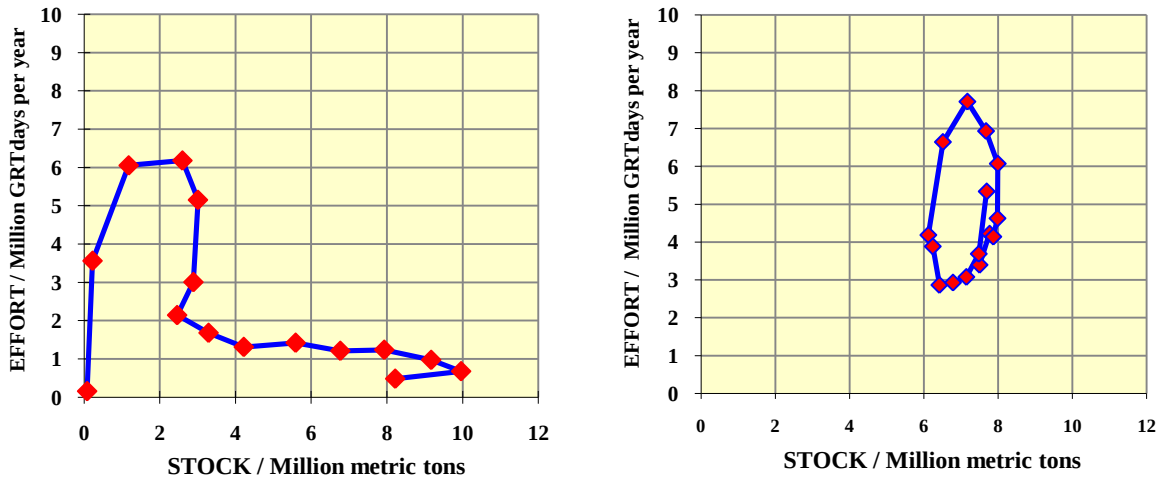

Figure 5. *Actual time path (left) and simulated time path (right) with a resource tax*

SOCIOECONOMIC CONSEQUENCES

The sudden and unhappy end of the herring boom had immediate and widespread effects on Iceland, both economically and socially. Many macroeconomic indicators took a dive: GDP, export, import, household expenditure (but not government expenditure!), fixed capital formation et cetera. Consumer prices went up and the exchange rate of the currency down. Some of these quantities recovered remarkably soon but others remained unstable for a long time, for example inflation and currency rates (Sigurdardottir, 1995). In the long run the crisis stimulated fishing of other species and establishing of other industries to replace the herring. Also, fisheries management changed gradually from Open Access to an almost complete (and controversial) Individual Transferable Quota system. As a matter of fact the first quota species was the Icelandic summer-spawning herring in 1976 after a fishing moratorium since 1972.

Before the collapse of the herring industry the Icelandic economy was very monotonic. Marine products, mostly cod, counted for about ninety per cent of the export value of goods and the value of herring products was between twenty per cent and forty per cent. After the collapse marine products dropped to seventy per cent, herring to five per cent and a new species, the capelin rose to ten per cent but has been very variable. In recent years other pelagic species, blue whiting and mackerel, have become important. A real novelty in the late 1960s was the entrance of a new heavy industry: aluminium smelting by electricity from hydroelectric or geothermal power stations. The value of that product from one factory became soon ten per cent of the export value but later other smelters were added and disputable plans to multiply the production have been executed and others are under discussion. In 2008 the export value of aluminium became for the first time greater than that of marine products as Figure 6 illustrates. This is a radical transformation of the Icelandic economy which was dominated by agriculture and fishing for centuries.

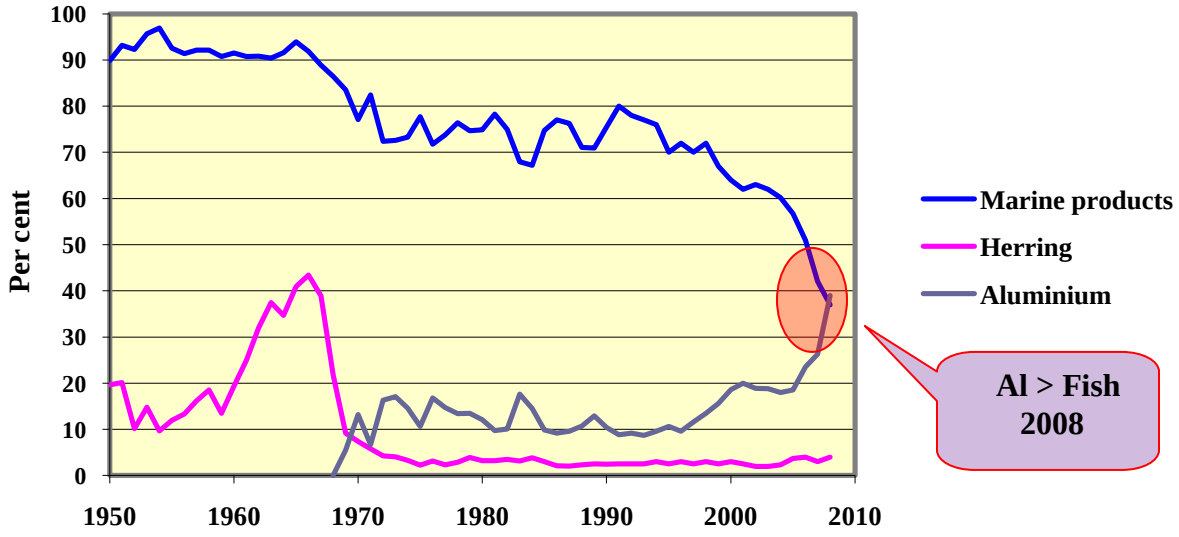

Figure 6. *The percentage value of some important export goods (Sources: Jonsson and Magnusson, 1997; Statistics Iceland [1])*

For decades the herring fishery was a source of wealth that trickled down the society. Mobile workers moved to the herring towns on the north and east coast and could earn a lot of money in the summertime, but sometimes the fishery failed and people were left jobless and penniless. There are numerous examples of how good herring seasons liberated especially women and students from poverty. Some towns based their whole livelihood on the herring fishery and when it failed negative social effects were for example demographic disturbance, temporary unemployment and emigration to other parts of the country or other countries. After the collapse many herring vessels and reduction factories were superfluous and the government financed new trawlers and freezing plants for increased demersal fisheries.

RISE AND FALL OF THE ICELANDIC BANKS

Banking, in the modern sense of the word, does not have a long history in Iceland. The first bank, *Landsbanki*, was established in 1885 as a private corporation but became a government enterprise in 1927 and served as a central bank until 1961 when an independent Central Bank of Iceland was founded. Stepwise privatization of Landsbanki was finalized in 2003. Another private bank, Islandsbanki, started in 1904 but went bankrupt and was replaced by a public corporation, Utvegsbanki (Fisheries bank), in 1930 and after state-directed merger with some smaller banks after 1990 and privatization it became *Glitnir*. A third publicly held bank, Bunadarbanki (Agriculture bank), came into being in 1930 and at the end of a privatization process it became *Kaupthing* in 2003. These three banks had branches all over the country in addition to many small savings and loan associations. After the privatization Landsbanki, Glitnir and Kaupthing seized the opportunity of expansion to countries within the European Economic Area where Iceland had been a member since 1994.

The international growth of the banks was very rapid as Figure 7 shows. Their combined assets were a tenfold gross domestic product in June 2008 (Flannery, 2009) and the majority of their business activities were outside of Iceland.

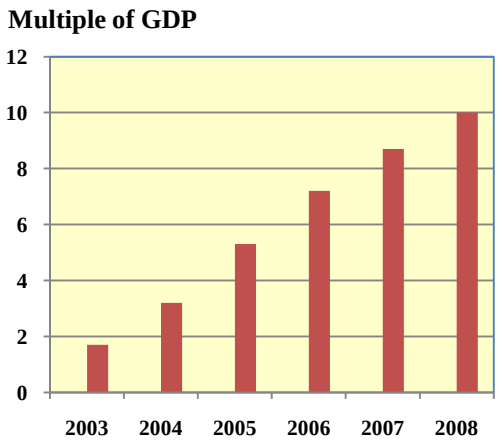

Figure 7. *Rise of the banks. (Source:Flannery, 2010)*

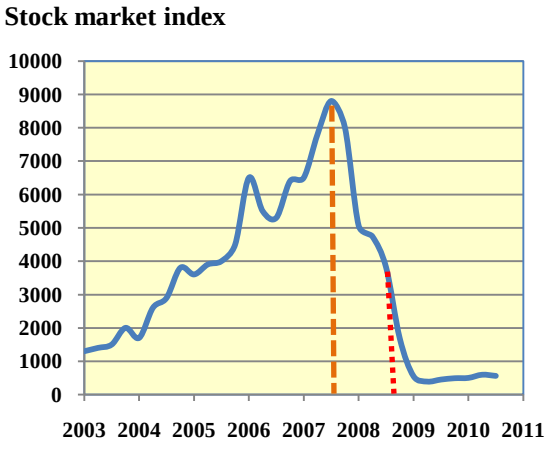

Figure 8. *Fall of the banks. (Source:tradingeconomics.com)*

But… what goes up must come down. Despite recent positive reports from credit rating agencies these three banks went bankrupt in October 2008 and were taken over by the government. They were the pillars of the Iceland Stock Exchange, established in 1985 and now part of NASDAQ OMX Group. Therefore, the Icelandic stock market collapsed simultaneously as Figure 8 demonstrates. Circumstances abroad such as the US sub-prime financial crisis in 2007 (orange line) and the fall of Lehman Brothers in September 2008 (red line) may have contributed to the crash, but too rapid credit expansion, weak underwriting standards and heavy reliance on wholesale debt markets were the main causes (Flannery, 2009). The Nobel economist Paul Krugman has explained the scenario more rhetorically: *"Iceland is, of course, one of the great economic disaster stories of all time. An economy that produced a decent standard of living for its people was in effect hijacked by a combination of free-market ideology and crony capitalism."* (Krugman, 2010). For five years the country was like an international casino where many foreign investors put a lot of money on the Icelandic roulette and some of them lost billions of euros.

The consequences of the banking collapse were so serious for the national economy and international relations that the Icelandic parliament appointed a *Special Investigation Commission* [9] in December 2008 to investigate and analyse the processes leading to the collapse of the three main banks. The commission delivered its report on more than 2000 pages in nine volumes in April 2010. Some ministers of the government and directors of the Central Bank of Iceland and the Icelandic Financial Supervisory Authority were accused of negligence. A *Special Prosecutor* was also nominated in January 2009 to investigate suspicion of bank owners´and directors´ criminal conduct leading to the collapse, but few of them have so far been indicted.

A TALE OF TWO CRISES

Because of the small population in Iceland the economy is very sensitive to both internal and external changes and historically it has been unstable compared to Europe as Figure 9 shows. The downturn in 1968 was to a great deal a consequence of the herring collapse which can be considered as an external change. The rapid recovery was on the other hand the result of internal changes: for example the new industry of aluminium smelting, fishing of new species, modernized trawler fleet and quality awareness. A few years later the extension of the exclusive economic zone to fifty nautical miles in 1972 and finally to two hundred miles in 1976 meant that foreign vessels, mostly British and German, had to leave the fishing grounds around the country and the Icelandic trawler fleet could increase its catch, which was a windfall.

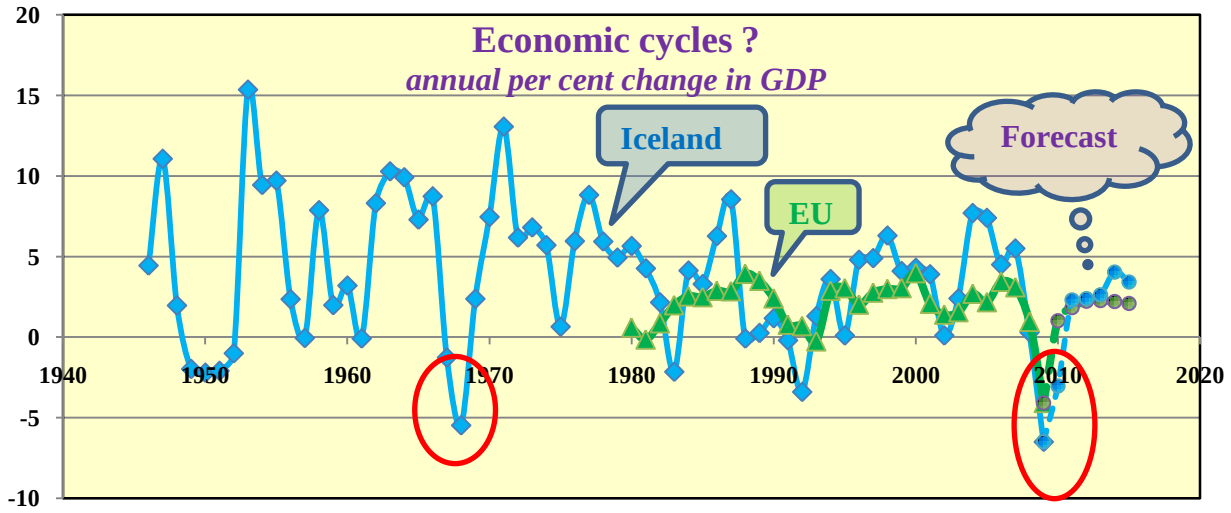

Figure 9. *Economic growth in Iceland and Europe during the last decades. (Sources: Statice [1]; IMF [2])*

Despite irregularities 'eyeball statistics' indicates troughs with a ten year cycle, but most conspicuous is the drop of minus six and a half per cent in 2009 – forty years after a similar descent in the wake of the herring collapse. That, of course, is partly a consequence of the global financial crisis in 2008, which hit Iceland so hard that the largest banks collapsed. The names are now infamous: Landsbanki, Glitnir and Kaupthing, because of their massive turnover, which was a multiple of Iceland´s gross domestic product, hazardous investment policy and aggressive retail deposit-taking. Compared to the herring collapse this was also an external shock on Iceland´s small economy which seemed to cause butterfly effects on international finance, but this time no windfall is to be expected.

The causes of these two crises are therefore different, but the effects are similar: inflation, bankruptcies, unemployment, emigration, falling currency, foreign debt. These problems have also unleashed political forces, expressed in the "Kitchenware Revolution" outside the buildings of the parliament and the central bank which led to the fall of the government in February 2009 and general elections in April.[10] Similar depolarization (from right-wing to left-wing) took place in 1971. The new government is trying to repair the damages by contracts with the International Monetary Fund and monetary authorities in neighbouring countries, but those measures are not popular.

It is too soon to analyze the banking collapse in detail but a superficial comparison with the herring collapse is worthwhile, even if the economic environment is much more complex now. High inflation after 1968 was persistent for more than a decade and reached a record of over eighty per cent in the early 1980s and took another decade to fall below ten per cent. In 2008 and 2009 inflation rose from five to twelve per cent and the projection for 2010 is six per cent, so it seems to be under control, but since most loans are index-linked to the domestic inflation or the rate of foreign currencies, unknown forty years ago, they are a heavy burden for business firms and ordinary people who have either lost their jobs or suffer from lower income. The exchange rate of the currency (krona) fell by about fifty per cent in both periods.[1]

Unemployment in the early 1960s was below one per cent but rose to a maximum of two and a half per cent in 1968 (Jonsson and Magnusson, 1997). For the last ten years unemployment was between one and three per cent but went suddenly up to eight per cent in 2009 and the nine per cent estimate for 2010 is close to the EU average. The forecast is six per cent in 2012. The comparison in Figure 10, however, is difficult because of changed registration rules, better unemployment insurance and much greater labour force participation nowadays. In fact, the workforce in Iceland is more than 85% (90% males, 80% females) of the population of working age, compared to an average of about 70% in the OECD-countries.[11]

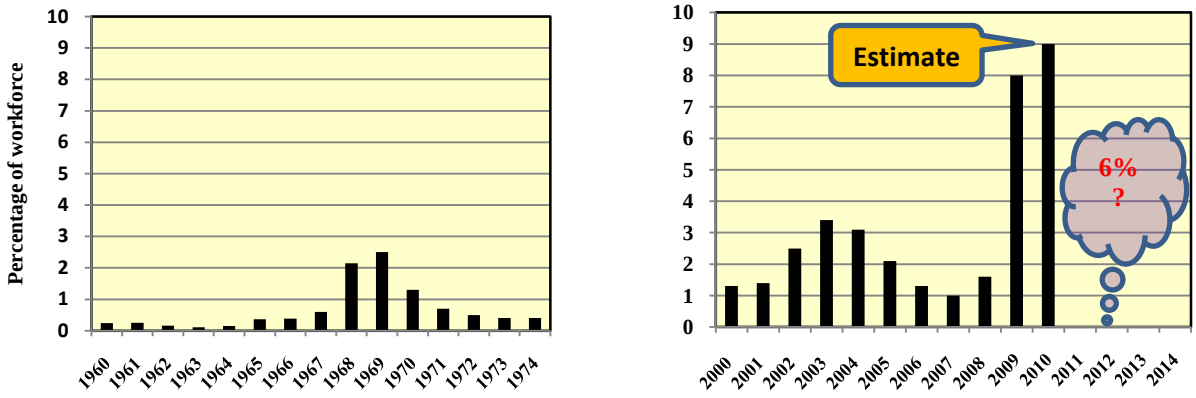

Figure 10. *Unemployment in Iceland before and afte two economic crises. (Source: Statice [1])*

In the period 1968-1971 net emigration to other countries was approximately one and a half per cent of the population, mostly to Scandinavia (Jonsson and Magnusson, 1997). Similar tendency was already visible in 2009 (see Figure 11) and the first months of 2010 show an upward trend, but many of the emigrants now were immigrants from the European Economic Area before the economy crashed. The number of emigrants in 2009 was the largest since 1887, when America was the 'promised land'. Now, Norway offers the best job opportunities, at least for skilled workers and professionals.

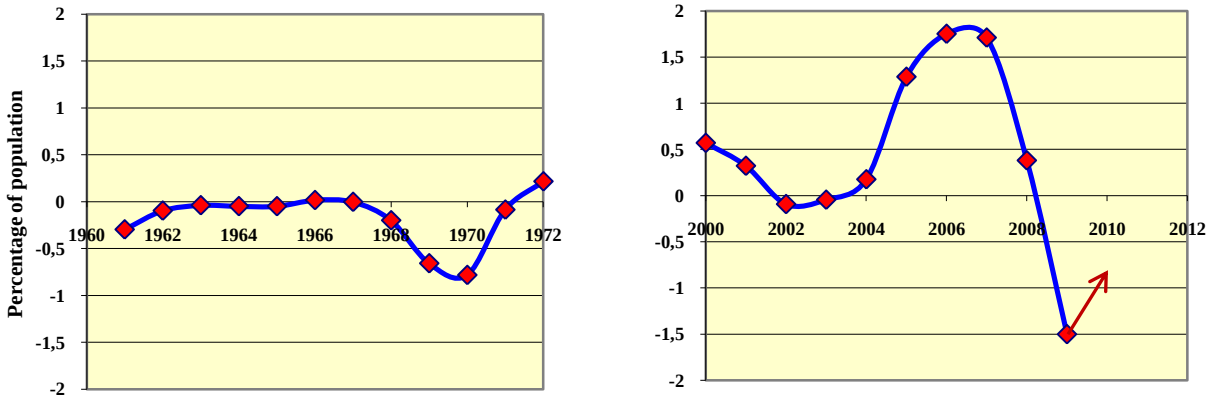

Figure 11. *Net migration to Iceland before and after two economic crises. (Source: Statice [1])*

The most striking difference between the two collapses regards liabilities. Since the private financial sector is under reconstruction the easiest comparison is between public sector debts. The left part of Figure 12 comes from data in Jonsson and Magnusson (1997) and the right part from the Central Bank of Iceland (Anonymous, 2010). Relative to GDP the effect of the 1968 crisis is small, but after 2008 there is a huge jump. (It should be noted that some other countries within OECD are coping with public debts of similar magnitude.) Landsbanki´s notorious 'Icesave' accounts in England and Holland are a considerable part (perhaps 25%) of these liabilities. According to an agreement between the governments of Iceland and these two countries, approved by the parliament (Althingi) at the end of 2009, the debt should be repaid with interest during 2016-2023. Yearly payment of that bond is estimated between six and four per cent of GDP by the Central Bank of Iceland (Anonymous, 2009) in a pessimistic scenario, but more optimistically between three and one per cent. The agreement, however, was rejected in a referendum last March so that this debt is still pending.

Economists and politicians argue about the debt service burden and the public is confused, enraged and depressed but the government is anxious to close the case as soon as possible. IMF´s economic outlook for the next five years is a rather quick recovery as depicted in Figure 9. A positive sign in this respect is that the pension funds are strong: their domestic assets are more than two thirds of GDP and foreign assets about one third of GDP. The private sector´s assets are uncertain and its debt load is heavy, but that is not a public liability and will either be sustainable or written off in the future (Anonymous, 2009).

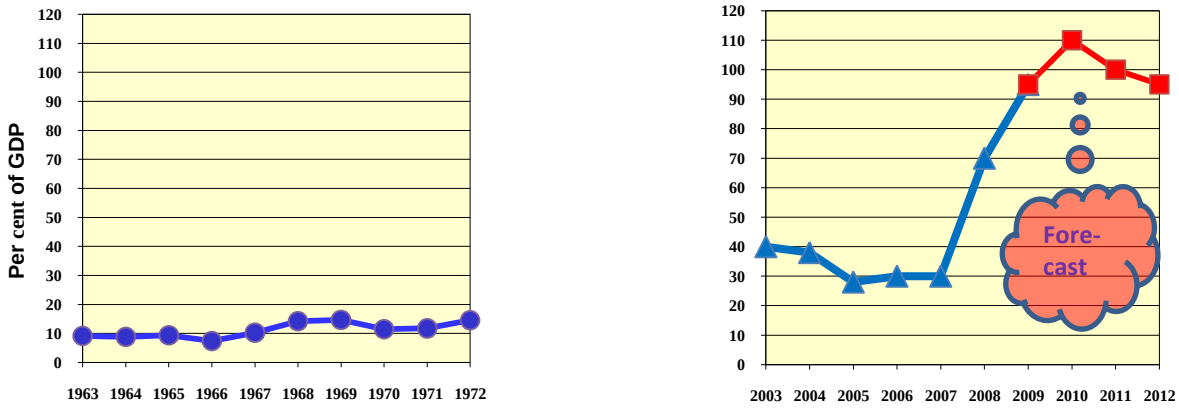

Figure 12. *Comparison of Iceland´s total public sector debt after two economic crises*

CONCLUSIONS

The herring collapse in 1968 had biological and economic causes: overfishing and lucrative markets. It was predictable and avoidable, but not preventable in lack of precautionary management. The following crisis had negative short-run social and long-run economic effects: emigration, unemployment, recession, inflation, devaluation, financial and political instability. Their solution promoted new industries, stricter economic management and improved social services. The banking collapse in 2008 had ethical and financial causes: insider lending and credit squeeze. It was predictable but not avoidable because of too rapid expansion, risk and greed. The following crisis had global roots and similar but starker local effects than the herring collapse and may cause long-run social and economic problems. Immediate negative consequences are insolvent households and corporations, international complications and dispute over foreign debts. Some economists and politicians believe the situation is fatal to the national economy and the public is worried about the consequences of increased taxes, budget cuts and higher amortisations of public treasury debts and private housing mortgage loans for their standard of living. No windfall will solve these problems as happened in the 1970s. The energy sector could in the future compensate for the saturation of the fishing industry, but the budget deficit and the loss of credibility in the world of finance need urgent measures. A positive implication of the collapse should and could be consensus about how to reconstruct the economy and revise moral codes in politics and business.

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ENDNOTES

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