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Lessons from a Collapse of a Financial System

SigriÃ°ur BenediktsdÃ³ttir

Jon Danielsson

Gylfi Zoega

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Sigridur Benediktsdottir, Jon Danielsson and Gylfi Zoega

Yale University; London School of Economics; University of Iceland and Birkbeck College, London

1. INTRODUCTION

The collapse of Iceland's banking system in October 2008 became one of the symbols of the global financial crisis. We describe the development that lead to the build up of a large internationally active banking system in a nation of 300 thousand inhabitants in just over five years and the subsequent banking crisis. Our main objective is to draw lessons from this episode for other countries, focusing on both the macro economy and financial markets.

The rapid rise of the Icelandic banks is unprecedented in the recent history of banking. This was a nation with no history of international banking where a recently privatised banking system and liberalised capital markets allowed perfect capital mobility for the first time in its history. The pace of the expansion of Iceland's banks was dramatic by comparison to other countries that have experienced capital inflows and turbulence following market liberalisation and the privatisation of financial firms, such as Finland and Sweden in the early 1990s, and significantly exceeds the expansion in other countries that recently have experienced banking crisis, such as Ireland. The total assets of the banking system went from 174% of GDP at the end of 2003 to 744% of GDP at the end of 2007, a period during which real GDP rose by 5.5% each year on average.[2] We explain how this occurred, why the banks' owners decided to let it happen and why the authorities did not intervene, and even encouraged the expansion.

The first lesson we draw from the crisis has to do with the role of politics in a financial crisis, where the Icelandic authorities, as a matter of policy, encouraged the creation of an international banking centre. The first step was the privatization and deregulation of the banking system, which took place amid pervasive cronyism, whilst the need for financial supervision was neglected with the supervisor seriously understaffed and lacking in both experience and political support. More generally, government ministries and the political class were out of their depth when it came to managing an economy based on an international financial system.

The second lesson from the Iceland experience has to do with regulation and supervision in the context of the European passport system. The Icelandic banks had the right to set up branches in the

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[2] During the first ten nine months of 2008 this ratio was to increase even further to around 1000% of GDP due to the depreciation of the currency which raised the value of foreign assets and debt of the banking system measured in domestic currency.

European Union by means of the European passport in financial services on the explicit assumption that home regulators were exercising adequate controls. The Iceland experience sheds some light on the fragility of the European passport in financial services.[3] The failure of its banking system – and the resulting economic crash of that country with spillovers in the United Kingdom and the Netherlands – demonstrates the inherent weaknesses in the European common market and European passport for financial services when one member country is able to set up a financial centre by undercutting the standards of other member countries – a form of regulatory arbitrage.

Finally, there are lessons about the conduct of monetary policy. The challenges facing the Central Bank of Iceland (CBI) operating in a regime of flexible exchange rates and inflation targeting is a perfect example of the difficulties faced by small open economies with independent currencies. By raising policy rates to stem an economic expansion caused by a capital inflow the CBI increased the flow of speculative money which made the financial system more fragile and prone to sudden stops. The interest differential created a profit opportunity for the carry trade, borrowing in foreign currencies and investing in the Icelandic krona, hence ignoring the associated currency risk to increase their operating profits. There were both carry trades by foreign speculators and also by domestic firms and households who borrowed significant amounts in foreign currency. Both worked to create a vicious circle of interest rate hikes, foreign money inflows and currency appreciation prior to the crisis.

The events leading to collapse of the banking system have now been extensively documented,[4] in particular by a *Special Investigation Commission (SIC)*,[5] appointed by the Icelandic Parliament in December 2008, which delivered its report on 12 April 2010 (BGH (2010), see http://sic.althingi.is/). The report describes the causes of the collapse in extensive detail.

2. PAST AND PRESENT

In this section we briefly describe developments in Iceland as a background to the subsequent sections, which will focus on the lessons from the episode.

2.1. From rags to riches

Iceland used to be among the least developed European countries until the early 20th century and remained relatively undeveloped financially until recent banking adventures. However, the country enjoyed steady economic growth throughout the 20th century that propelled it to become one of the richest societies in the world. In 1904 the PPP-adjusted GDP per capita was similar to that of Ghana today while at the beginning of the 21st century it had surpassed that of Denmark, the results of growing at 2.6% on average in the 20th century (Gylfason et al., 2010). This growth was partly fuelled by access to foreign finance, following the establishment of the country's first private bank at the turn of the 20th century, providing financing for the mechanisation of the fishing fleet. In addition Iceland extended its fishing limits from three miles in 1904 to 200 miles in 1976 significantly increasing its catch whilst preventing excessive overfishing. Iceland also has extensive hydroelectric potential which has been increasingly exploited. This has been aided by relatively long working hours of a labour force whose education has been steadily improving.[6] Moreover, the country took advantage of international trade by joining EFTA in 1970 and the European Economic Area in 1994.[7]

[3] As discussed for example by the de Larosière (2009) report, and recognized in the proposals for the European Systemic Risk Board, European Banking Authority, and European Securities and Markets Authority.
[4] See also Danielsson and Zoega (2009a and 2009b) for a description of the collapse of Iceland's financial system and Gylfason (2010) on some of the lessons.
[5] One of the three members heading the commission, Sigridur Benediktsdottir, is also co-author of this paper.
[6] See OECD, Labour Force Statistics.
[7] The EEA is a sort of half way membership of the EU. The members of the EEA besides Iceland are Norway and Liechtenstein, and membership in the EEA provides many benefits for member countries, including full participation in the European passport.

2.2. Privatisation and liberalisation

Before the liberalisation of Iceland's credit markets in the 1990s, capital was rationed between different industries by the government, nominal interest rates were set by the CBI, which was controlled by the government, and real interest rates were kept negative until the late 1980s. The banking system was heavily regulated and politicized, consisting of large state-owned banks along with smaller private banks. Each of the large banks was affiliated with one or more political party. The same political structure applied to the CBI, with its three governors each representing one of the political parties with no requirements of prior experience or education in the fields of finance and economics, central banking, commercial banking or business.

The 1990s saw the liberalisation of the economy. A stock market was established, capital controls abolished and the commercial banks privatized. This followed the decision to make interest rates market determined in the early 1990s. By joining the European Economic Area (EEA) in 1994, Iceland became a part of the European single market in goods, services, capital and labour and adopted EU laws and regulation.

The decision to join the EEA affected subsequent developments, inducing Iceland to remove capital controls; allowing Icelandic banks to set up branches in EU countries; and paving the way for the banks to borrow from foreign banks because they were, supposedly, subject to EU regulation.

2.3. A bridge too far

The expansion of Iceland's banking system did not occur suddenly in a vacuum. In the 1990s a new generation of politicians came to power. These were young libertarians revolting against the state-run and corrupt system they had been raised in. In the 1990s they had the chance to implement their agenda in a systematic fashion. By the end of the decade a programme of privatisation and liberalisation of the economy had been all but completed: only the state banking system was still to be privatized.

Around the turn of the century the idea surfaced that banking could become the third pillar of the economy, the first two being fishing and energy-intensive industries.[8] In short order the financial sector grew at exponential rates, quickly eclipsing the national economy in size, while at the same time financial supervision did not keep pace. Gylfason et al. (2010) discuss the problematic privatisation of the banking system in 1998-2003 when the two large state banks, Landsbanki and Bunadarbanki – later Kaupthing – were privatised. The banks were sold to individuals who were related or affiliated with the two parties in power, which can be seen as a case of the "grabbing hand" to use the terminology and Andrei Shleifer.[9] Interestingly, the new owners of Landsbanki borrowed a large part of the price from the Bunadarbanki and vice versa.[10] Gylfason (2010) maintains that the close ties between the banks and the political parties convinced the civil service not to interfere with the banks' operations.

The prime minister appointed a commission in 2005 to evaluate how Iceland could become an international financial centre. The chairman of the board of Kaupthing Bank headed the committee that reported in October 2006 under the title *International financial operations in Iceland*. The report was presented, perhaps fittingly, in the National Theatre on 10 November 2006 and three government ministers were subsequently given the task to implement its policy proposals. This idea had become so ingrained by the time of the collapse that the then minister of commerce stated on 10

[8] See „Iceland warms to offshore banking: PM wants country to emulate Luxembourg and Switzerland, reports Tim Burt," Financial Times. Apr 7, 1998: http://proquest.umi.com/pqdweb?did=28448890&sid=1&Fmt=3&clientId=58032&RQT=309&VName=PQD&cfc=1.
[9] See Shleifer and Vishny (1993) and Frye and Shleifer (1996) on political corruption.
[10] According to BGH (2010) the owners of Landsbanki borrowed 2/3 of the purchasing price from Bunadarbanki, later Kaupthing (chapter 5, BGH, 2010).

April 2008, less than six months before the collapse: "The fact that the financial service industry has become bigger than the combined agricultural and fishing sectors tells us simply that derivatives and bonds have become our sheep and cows" (see Benediktsdottir, Gunnarsson and Hreinsson, 2010, BGH (2010) from now on).

The expansion of Kaupthing, which turned out to be by far the largest bank at the time of the collapse, is described in Jonsson (2009), the bank's chief economist. He describes how the ambitious plans of its chairman of the board were revealed at a meeting with employees in March 1999 when the chairman declared that he anticipated a 25-fold increase in equity and a roughly 15-fold increase in the bank's balance sheet within five years and that the bank would open offices in many countries. His business model was to combine investment and commercial banking. The bank engaged in highly profitable and risky proprietary trading. Jonsson describes how at the end of the chairman's speech the audience was left in a state of disbelief, to which he responded by saying "If you think you can, you can."

The intermediate consequence was a rapid expansion of the financial system in the global arena, bringing with it significant profits back to Iceland, skewing the economy and leading to a belief that finance would become the foundation of the country's future prosperity. In turn, the political establishment became enthusiastic supporters of the expansion of the financial system, with the President of the Republic,[11] Professor Grimsson, the most articulate cheerleader abroad, attributing the prowess of the Icelandic banks as much to myth as reality. The following quote is taken from a speech he gave at the Walbrook Club in London in 2005:

> "Recently, I have often found myself cornered at various functions, especially here in London, and pressured to explain how and why daring Icelandic entrepreneurs are succeeding where others hesitate or fail, to reveal the secret behind the success they have achieved…
>
> How has it been possible to achieve such success in so many different fields and in such a short time, in areas where we definitely had no prior competitive advantage, areas such as pharmaceuticals and prosthetics, banking and finance, retail and fashion – to name only a few.
>
> Of course, many factors have contributed to the success of this voyage, but I am convinced that our business culture, our approach, our way of thinking and our behaviour patterns, rooted in our traditions and national identity, have played a crucial role. All of these are elements that challenge the prevailing theories taught in respected business schools and observed in practice by many of the big American and British corporations. We are succeeding because we are different, and our track record should inspire the business establishment in other countries to re-examine their previous beliefs and the norms that they think will guarantee results. The range of Icelandic success cases provides a fertile ground for a productive dialogue on how the modern business world is indeed changing."

In conclusion, President Grimsson summarised his argument:

> "The track record that Icelandic business leaders have established is also an interesting standpoint from which to examine the validity of traditional business teaching, of the theories and practice fostered and followed by big corporations and business schools on both sides of the Atlantic. It enables us to discuss the emphasis on entrepreneurial versus structural training, on process versus results, on trust versus career competition, on creativity versus financial strength. "

Before concluding by: "You ain't seen nothing yet."

[11] President Grimsson can not be described as a naïve provincial observer of these events. He has a PhD from University of Manchester and subsequently was a professor at the University of Iceland before turning to politics at the head of the People's Alliance party, the successor to the Icelandic Communist Party.

2.4. Exploding banking system

The combined balance sheet of the three biggest banks grew by a factor of eight from the beginning of 2004 to the middle of 2008.

Table 1. Annual asset growth in euros 2004-2008

	Glitnir	Kaupthing	Landsbanki
Average annual asset growth	50%	61%	51%
Average annual organic growth	41%	39%	47%

Source: BGH (2010).

The banks grew both by acquiring foreign financial institutions and organically,[12] as can be seen in Table 1. Their balance sheet expanded mainly by lending to foreign firms[13] and domestic holding companies. Table 2 shows changes in the ratio of the assets of the banking system to GDP from end of 2003 to August 2008.

Table 2. The size of the banking system

Date	Total Assets (ISK billions)	GDP (ISK billions)	Assets/GDP
2003*	1,462	841	1.74
2004*	2.208	928	2.38
2005*	3,854	1,026	3.76
2006*	6,232	1,168	5.34
2007*	9,739	1,309	7.44
2008M02	10,172	1,478	6.88
2008M04	11,730	1,478	7.94
2008M06	12,574	1,478	8.51
2008M08	12,787	1,478	8.65

Source: CBI and Statistics Iceland. * end of year value. 2008M02 refers to February 2008.

During their initial expansionary phase, the banks financed their growth by borrowing extensively in the European bond market, made possible by good credit rating[14] based on the banks high capital adequacy ratio (CAR) and supported by a high sovereign[15] rating.[16] In 2004-05, the three biggest banks borrowed around 21 billion Euros in foreign debt securities markets or about twice Iceland's annual GDP at the time. Most of the issuance was in the form of debt securities with a maturity of 3 to 5 years with interest rates of only 15 to 25 points over the benchmark interest rate (BGH (2010), chapters 7 and 21).

The implicit sovereign support was factored into the ratings of the banks, which in turn explained the easy access to funds and low financing costs enjoyed by the banks. This was expressed explicitly, e.g. by Merrill Lynch stating the banks were rated above what their standalone financial strength would have suggested.[17] Similarly when it came to foreign deposits financing, the banks advertised that the deposit accounts were covered by the Icelandic deposit insurance fund in accordance with EEA (European Economic Area) regulations. Hence they collected deposits on the back of the EEA regulations, not on the basis of their financial strength.

[12] Most notably in 2004 and 2005 when Kaupthing acquired the Danish bank FIH Erhversvsbank and the British bank Singer & Friedlander. Around the same time Glitnir acquired the Norwegian BN Bank in 2005.
[13] Foreign listed firms, this does not indicate the nationality of the owners of the firms, who the SIC commission found often to be Icelandic (chapter 8 BGH 2010).
[14] The biggest of the three banks, Kaupthing, got A from Fitch and A1 from Moody's in 2006, at the same time Moody´s also rated Glitnir with A1 and Landsbanki with A2. All three banks were upgraded for a six week period at the beginning of 2007 to Aaa, based on them being systemically important. When the banks failed Glitnir had a A2 rating while Kaupthing was rated A1.
[15] The ratings of the sovereign in the middle of 2005 were as follows: Fitch AA-/AAA, Moody's: AAa and Standard and Poor's AA+, while Standard and Poor's gave a rating of AA-/A-1+for foreign-currency denominated debt.-
[16] Consolidated general government gross debt at nominal value, outstanding at the end of the year, was only 26% of GDP at the end of 2005 (Source: Eurostat).
[17] "Icelandic Banks Not What You Are Thinking" Merrill Lynch, 7. March 2006.

Following the publication of negative reports by ratings agencies at the beginning of 2006[18] the banks' access to the European securities market became increasingly limited, and did not open up fully again. Later that year, however, they had success in selling securities in the U.S. medium term note market, where they issued bonds amounting to over 6 billion Euros. The cost of financing had however gone up by 50-60 basis points, high by the standards of the very liquid financial market of the time. Icelandic banks were now paying interest rates comparable to emerging market financial institutions with much lower credit ratings. This made their bonds attractive as components of CDO structures.[19]

When the global crisis of 2007 gathered momentum, foreign retail deposit accounts – Icesave from Landsbanki and Edge from Kaupthing – became an important source of financing. Icesave deposits were primarily used to finance a sharp decline in the more rating-dependent wholesale deposits in the UK and Netherlands, while deposits in Kaupthing Edge were a new source of liquidity.[20] The banks also resorted to short-term collateralised borrowing from the CBI and the Eurosystem. The latter borrowing was mostly done through the Central Bank of Luxembourg, where all three of the largest banks had subsidiaries.

2.5. Uniqueness of the Icelandic case

Several factors combine to make the Icelandic banking bubble unique. First, unlike many other nations with an outsized banking system such as Switzerland and Luxembourg, the institutional memory of running a modern banking system spans years not centuries, affecting both the quality of supervision and the management and internal operations of the banks.[21] Secondly, in contrast to Switzerland which also has a very large banking system, the stock of external debt was very high and denominated in foreign currency. Third, in contrast to some other countries with outsized banking systems like Luxembourg, all banks were headquartered in Iceland which made the banks have to rely on the CBI for liquidity support and the Icelandic state for any equity injection needed in a crisis. Fourth, the Icelandic banks grew very rapidly, affecting the quality of their loan portfolios. In addition to that, a significant part of the banks' capital appears to have been weakened by the banks themselves, creating a false impression to creditors and depositors of a shield against losses, as will be explained in more detail in section 4.3.

2.6. Risk and Risk-seeking

The Icelandic banks followed their counterparties abroad in using leverage to expand their balance sheets, aided by global under-pricing of risk and ample liquidity coupled with a compensation systems rewarding risk taking. There are however at least two relatively unique factors relating to risk.

[18] A Fitch Ratings published report published on February 22 says that Fitch had revised the outlook on Iceland's long-term sovereign rating from stable to negative. Fitch described the macroeconomic imbalances and raised concerns about how well the broader financial system would cope if the economy suffered a hard landing. Moreover, Fitch pointed out that the rest of the economy was significantly indebted, yet Icelandic banks and businesses continued to pursue ambitious expansion plans abroad funded by borrowing abroad. Fitch noted that Iceland's net external debt was higher than virtually any other Fitch-rated sovereign, while its external liquidity ratio was among the weakest. Lastly, they pointed out that the banks remained heavily dependent on foreign funding and could ill afford to be shut out of international capital markets for any length of time. Another report written by economists at the Danske Bank (Christensen et al.), appeared in March 2006 under the title "The Geyser Crisis" was also quite explicit in warning about the dangers facing the country. They said that Iceland's economy was the most overheated in the OECD area and that there had been a stunning expansion of debt, leverage and risk-taking, "almost without precedents anywhere in the world."

[19] "Lehman exposure was included in around 2,600 so-called mezzanine CDOs that were rated by Standard & Poor's. WaMu exposure is included in 2,100 such instruments and Icelandic banks are part of several hundred, Mahadevan noted." "Corporate CDO threatens bank capital, credit spreads." Reuters, 22. October 2008, and BGH (2010), chapter 7.

[20] BGH (2010), chapters 7 and 18

[21] Mark J. Flannery: Iceland's Failed Banks: A Post-Mortem (SIC report 2010).

First, whilst some other countries allowed a part of the banking system to assume high risk levels, in Iceland the entire banking system acted like the most risk seeking institutions abroad. Perhaps the closest counterpart in the current crisis has been the Irish banking system.

Secondly, Iceland's position as a member country in the EEA, but outside the euro created unique risk factors and opportunities. In particular, the risk of a currency depreciation was not reported in business accounts. This created an interest-rate spread between Iceland and many other countries, enabling very high accounting profits from borrowing from the banks in foreign currencies. It also helped to render monetary policy ineffective, as we will discuss below.

2.7. Looting the banks from the inside

The Icelandic banks shared some of the features that according to Black (2005) characterise banks that are being looted from the inside: They grew very fast; made bad loans at high yields; were highly leveraged; and had low bad-debt reserves. Akerlof and Romer (1993) describe how a bank's owners can take advantage of deposit insurance and other implicit or explicit backing by the state. The owners take in deposits, pay themselves dividends greater than the net worth of the business, and then leave the government to pay off the resulting debts.

There are various other ways of exploiting deposit insurance and other explicit and implicit state backing; make high-interest high-risk loans, buy junk bonds, buy highly leveraged firms where a large part of their value is accounting goodwill, and then pay high salaries and dividends from the false accounting income. The bank owners can also make loans to outsiders who then share the proceeds with the owners through asset purchases or exchanges at exaggerated prices involving the owners.

Akerlof and Romer describe how banks and their owners in Chile in the early 1980s could exploit the interest differential between the dollar and the peso to create false accounting profits that could be used to justify the paying of dividends to the banks' owners. Importantly, the banks did not increase their allowances for bad debt in spite of having lent money to firms that are likely to default if the currency depreciates, making it possible for the owners to extract resources from their companies because of inflated accounting profits. In the Chilean case, the bank owners were frequently among the firm owners – the banks were related to the borrowers ensuring that all the gains from the transaction accrued to the owners of this group of firms.

Similar factors were at work in Iceland. The Icelandic banks did not make allowances for losses on their foreign currency loans in excess of what they did in the case of their domestic currency loans despite the fact that many of the borrowers did not have any cash flow in foreign currency, thus adding currency risk to credit risk. Table 3 compares the loan loss allowances of the Icelandic banks to those of Deutche Bank, Danske Bank, the Royal Bank of Scotland and the HSBC. It is striking that the numbers for the Icelandic banks are lower than in the four foreign banks.

Table 3. Loan loss allowances as a percentage of loans

	Icelandic banks	Deutche Bank	Danske Bank	Royal Bank of Scotland	HSBC
2006	0.82	0.94	1.37	1.57	1.40
2007	0.77	0.86	1.54	1.64	2.10

Source: Flannery in BGH (2010) and banks' annual accounts.

The majority of the foreign currency loans were to holding companies.[22] The holding companies then often invested in stocks, typically Icelandic krona stocks, which rose rapidly in value during the credit expansion. These unrealised capital gains were recorded in the company accounts and contributed to very high accounting profits, which were extracted through dividend payments. This behaviour constitutes an underreporting of risk in the short run and has the effect of exaggerating the accounting profits of both banks and the holding companies.

As the collapse approached, the behaviour of the banks' owners can only be characterised as looting in the definition of Akerlof and Romer; the owners trying to extract resources from the banks to serve their own interests at the expense of foreign creditors and the Icelandic taxpayers. Most obvious is the easy access of the bank's owners to borrowing from their own banks, despite the financing difficulties the banks were facing after mid 2007.[23] This is most obvious when it comes to the largest owner of the smallest of the three big banks, Glitnir Bank.[24] After this particular owner and related parties increased their stake in Glitnir significantly in the spring of 2007, lending to the group grew rapidly, more than doubling in euros from June 2007 to June 2008, see Figure 1.[25] These loans were almost exclusively in foreign currency during a period in which Glitnir bank's liquidity position in foreign currency became increasingly dire.

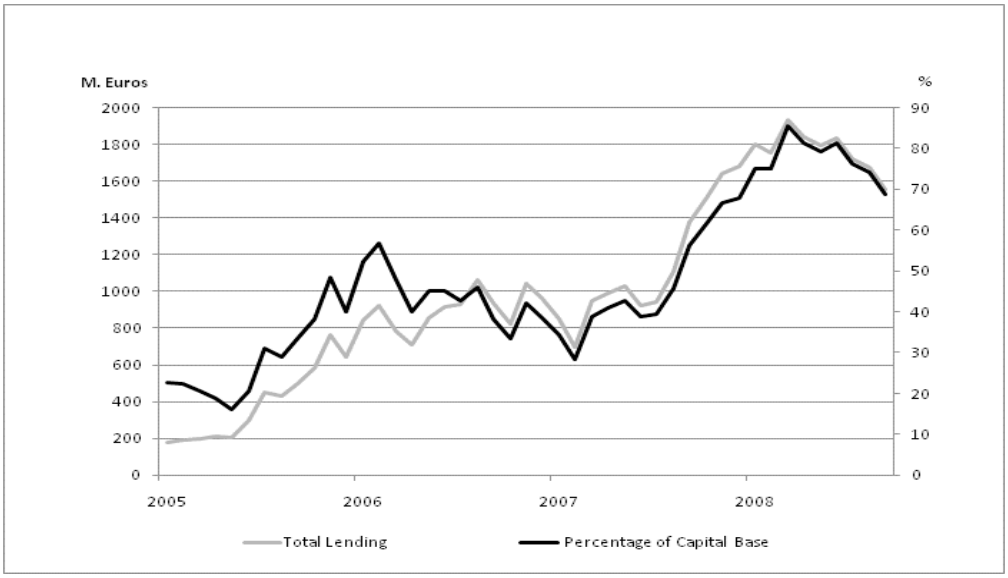

Figure 1. Total lending by Glitnir Bank to its largest owner and related parties

Source: BGH (2010), chapter 8.

In addition, lending to the owners from money market funds run by a subsidiary of Glitnir bank increased rapidly over time, doubling from June 2007 to June 2008. During that same period the total assets of the funds decreased (BGH (2010), chapter 14).[26]

[22] The outstanding loans to holding companies were far in excess of one year's GDP at the time of the collapse when loans to households amounted to one year's GDP (CBI).

[23] In general the BGH (2010) report found that the banks violated laws by making their outstanding loans to related parties exceed 25% of the CAD. In so doing they used accounting tricks to define the term "related parties" too narrowly.

[24] This is *Baugur Group Inc*., the owner of many high-street stores in London; Baugur Group was a large owner of Glitnir through ownership of FL Group.

[25] Note the figure is in euros, the decline in debt in 2008 is hence to some extent due to the depreciation of the krona in 2008 which lowered the euro value of the debt for a given stock in terms of the krona.

[26] More inventive ways were also used to channel bank funds to the owners' other businesses. One was to allow two holding companies to enter into a futures contract on one of the owners´ affiliate's bonds, amounting to a total of 130 million euros. Both firms had no assets and only posted collateral of 7.6 million euros. This collateral was in large part borrowed from a small Icelandic bank, Icebank. To hedge the contract Glitnir Bank bought the bonds in question, hence lending the affiliated firm the money with about 95% of the risk of the loan borne by the bank. This was not counted as a liability of the affiliated firm in Glitnir's large-exposure reports to the Icelandic FSA. The name of this company was FL Group. It was an investment fund formed when new owners of Icelandair, the national carrier, decided to split it into an investment fund and an airline.

A large owner of Kaupthing Bank[27] had been able to finance its shares in the banks through Citibank but as the share prices in Kaupthing started to fall, Citibank began to demand payback or increased collateral. From the fall of 2007 to May 2008 Kaupthing lent the same owner the funds needed to repay Citibank. During that time the owner's debt with Kaupthing rose from 250 million euros to over 500 million euros. Similarly Landsbanki lent 50 million euros in two installations to a firm owned by one of its largest owners to pay a margin call made by Deutche Bank in June 2008.

2.8. The collapse

Iceland's banking system collapsed over a period of two weeks in October 2008 and the stock market was almost completely wiped out with over a 75% decline in the main stock market index during those two weeks. At its lowest level the stock market index was less than 5% of its July 2007 high.[28] The foreign currency market ceased functioning and the external payment system froze.

2.9. The failure to react

The passivity of the authorities in the run up to the collapse of the banking system in October 2008 is noteworthy. However, they did ask for swap agreements with other central banks to boost the foreign exchange reserves and were turned down by the Federal Reserve, the Bank of England and the ECB but given a swap agreement with the Nordic central banks conditional on changes in macroeconomic policies, the public housing financing fund and wage contracts, which the authorities never implemented. Instead, the Governor of the Bank of England offered to coordinate a multinational effort by Central Banks to scale down the size of Iceland's banking system. The Governor of the CBI did not accept this offer which only served to increase the country's isolation in the summer months of 2008 (BGH 2010).

The passivity of the authorities as well as their unwillingness to coordinate actions with other countries requires an explanation. One reason is that the authorities did not realise how fragile the banking system was since they had been led to believe by the banks that they had liquidity that would last until the end of 2009. The prime minister at the time has stated that he was repeatedly lied to.[29]

The SIC committee came to the conclusion that the prime minister should have sensed the imminent dangers at the beginning of 2008 and hence should have asked for information, analysed the risks faced by the economy, made preparations and taken action. The committee also criticised the government's inaction in not forcing Landsbanki to convert its Icesave branches in the U.K. and the Netherlands into subsidiaries. The other ministers face similar charges in not assessing correctly the vulnerabilities of the financial system and government finances. The minister of commerce is criticised for not deciding and making clear to what extent the deposit insurance fund would receive state backing. The CBI governor is also found to be guilty of negligence by not responding to a request by the Landsbanki to consider ways of transferring the Icesave accounts into British jurisdiction as well as in its response to a request by Glitnir bank for liquidity support that triggered the October crisis.

In the autumn of 2010 the parliament agreed to refer his case to a special court for possible prosecution on charges that he acted negligently in the lead-up to the country's financial crisis.

[27] This was *Egla Invest BV*.
[28] NASDAQ OMX Iceland (Icelandic: Kauphöll Íslands) or ICEX, index for all stock on the Icelandic stock exchange (OMXPI)
[29] Prime minister's response to parliamentary committee, September 2010.

2.10. Government moral hazard

The internationalisation of the banking system provides another possible explanation for the passivity of the authorities. As the potential cost of a collapse of financial institutions was increasingly shifted outside the economy, the incentives to regulate the financial industry efficiently became lower. A disproportionate share of the rent went to Iceland, while the risk was increasingly born by foreigners.

In betting on resurrection, the authorities may have thought that the benefit to the economy was great if the banks could keep on going, while the cost of the collapse would be borne in part by others. The banks were betting on life, but we would like to argue that the supervisor, the CBI and the government may also have been betting on life towards the end. This moral hazard problem may be one of the side effects of shifting costs of financial crises outside the region where they occur. However, this explanation is purely speculative at this point in time.

2.11. Losses

The total assets of the banks were 182 billion dollars three months before the crash which is about 1.8 times the assets of WorldCom before its failure in 2002 and almost three times the assets of Enron before its failure in 2001. Taken as one entity the failed banks would rank third in the US history of bankruptcies, with Lehman (691 billion dollars) first and Washington Mutual (328 billion dollars) second. As separate entities, Kaupthing (83 billion dollars) would rank 5th, Landsbanki (50 billion dollars) 9th and Glitnir (49 billion dollars) 10th. The total loss to creditors was around 47 billion Euros (Source: Financial Services Authority of Iceland, FME). Domestic deposits were fully government guaranteed – whether held by domestic nationals or foreigners – while the status of depositors in foreign branches remains uncertain. This is due to emergency legislation passed in October 2008.

2.12. Losses due to foreign deposit taking

The collapse of the banks had consequences for foreign creditors and international relations. Deposits held by the Landsbanki Icesave accounts in the U.K. and the Netherlands amounted to around 7 billion pounds sterling or 8.4 billion Euros[30] at the time of the collapse.

Relations with the governments of the U.K. and the Netherlands have remained strained by the episode. They decided to compensate depositors in their respective countries beyond the minimum required 20,887 euros whilst demanding that the Icelandic government take responsibility for the insurance up to the minimum amount of 20,877 euros by borrowing from the U.K. and the Netherlands, i.e. the minimum deposit insurance.[31] Although it currently appears that the assets of the Landsbanki may cover the amount insured, negotiations about the resolution of this issue are still ongoing. [32]

[30] Using the euro-sterling exchange rate on 10 December 2010.

[31] In negotiations between the Icelandic government and the U.K. and the Netherlands, these countries have demanded that they will also be compensated for the amount that they have chosen to compensate depositors in excess of the 20,877 Euros per deposit from the bank's recovered assets.

[32] Note that even though the assets of Landsbanki will suffice to cover the amount insured that does not include interest on the loan from the UK and the Netherlands. Those claims will not be priority claims on the estate of the bank. Hence the importance of the negotiations about the loan terms for the Icelandic tax payers.

2.13. The external asset position of Iceland

In order to further explore the allocation of post-crisis losses we can compare the net external asset position of Iceland before and after the crash. The external debt of Iceland is currently close to 300% of GDP, about twice as high as the external debt of Greece, Latvia and Hungary. However, this is partially offset by substantial external assets. The gross external debt has fallen from the order of 500-600% of GDP in 2007.[33]

The ratio of net external debt to GDP ranges between 50% and 100% between 2003 and 2005; exceeds 100% in 2006 and exceeds 200% of GDP in the second quarter of 2008, the year of the collapse. When the banks are included, this ratio rises to 380% in the last quarter of 2009 and 369% in the second quarter of 2010 due to the collapse in the value of foreign assets.

It is interesting to compare the current net asset position with the banks excluded – since the banks have been allowed to default on their external debt without any state guarantee – to the position at the beginning of 2003 when the banking adventure was starting. The net debt position measured in domestic currency in the second quarter of 2010 is negative 571 billion ISK or negative 3.6 billion euros, which is 37% of GDP for 2009. In comparison, the net asset position in the first quarter of 2003 was negative 567 billion ISK or negative 6.5 billion euros using the exchange rate at the end of that quarter. Put this way, the net debt has been slashed in half during this period. It follows that the net asset position of the country may be somewhat better today than what it was at the beginning of 2003. However, it should be noted that while the leftovers from the carry trade are included in the figure, these numbers do not take into account the foreign ownership of domestic-currency assets that stem from the failed banks – such as bank deposits – that are now under the ownership of foreign creditors. These amount to 20% of GDP according to the IMF (2010). They also do not include the Icesave debt to the U.K. and the Netherlands that still has to be negotiated but were estimated to create a net debt of 17% of GDP (IMF, 2010) but are now estimated to be significantly lower according to the latest draft settlement in December 2010.

Icesave is still under negotiations at the time of writing, but according to the latest offer from the UK and Netherlands, considerably less than 17% of GDP will fall on Iceland.[34] That number is quite uncertain, it depends on very high recovery rate from the estate of Landsbanki, almost 100% for priority claims; that the Icelandic government prevail in lawsuits from other creditors; and perhaps most important that the exchange rate be favourable. The claim by the Icelandic government on the estate is fixed in domestic currency, but the obligation to the UK and the Netherlands is in foreign currency. The assets of the estates of the banks are in foreign currency. Therefore, if the economy recovers and the exchange rate appreciates, Iceland's net obligation is reduced, and similarly if the economy does poorly and the exchange rate falls, Iceland will have much larger net payments.

[33] These and other numbers in this section are taken from the website of the Central Bank of Iceland, www.sedlabanki.is, unless other sources are cited.
[34] The number 3% of GDP has been mentioned by the government.

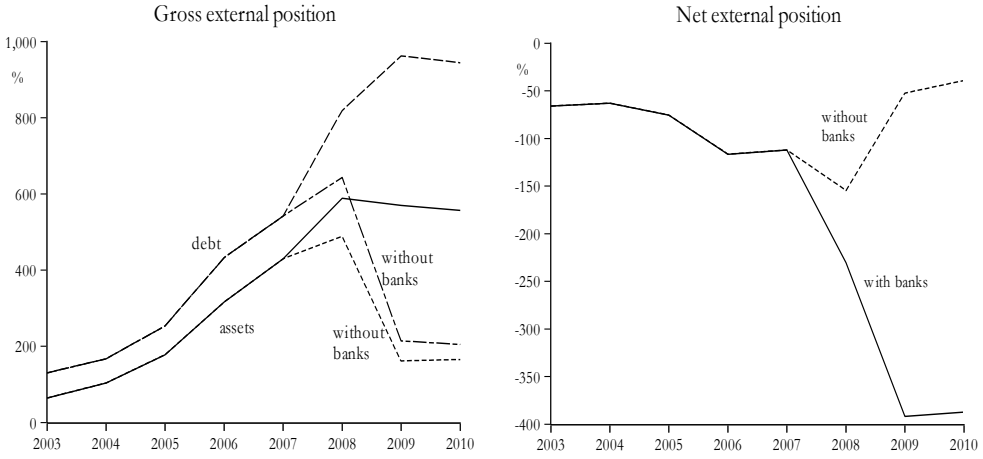

Figure 2. The external position of Iceland (% of GDP).
Source: CBI.

Moreover, there are vulnerabilities described in the IMF staff report (2010), such as imbalances between sectors; the government and the CBI have accumulated considerable debt and pay higher interest rates on this debt than they can earn on foreign assets; the pension funds have significant foreign assets (35% of GDP); and while the new banking system has very limited foreign assets and liabilities, the business sector – having suffered losses on its asset side – has liabilities that exceed assets. For this reason it is not clear that the inflow of interest income will match the outflow of interest expenditures. Furthermore, the value of foreign assets is uncertain and the rate of return on these assets may not be equal to the rate of interest on foreign debt.

However, Iceland's position is better than indicated by Figure 2 for several reasons. First, there are some multinational businesses that are domiciled in Iceland and the debt of these companies is a part of the country's gross external debt. Yet their operations largely take place abroad, so that a current account surplus is not needed to service their debt. This debt is about half of the external debt of the business sector (77% of GDP according to IMF 2010). Second, the foreign direct investment liabilities are concentrated among exporters, especially in the energy-intensive industries. There remains the external debt of businesses that do not have foreign-currency earnings but this is only 5% of GDP (IMF, 2010).

The external position is surprisingly good in light of the losses that occurred and the accumulated current account imbalances in the previous five years. The country ran a current account deficit in every year between 2003 and 2009. These deficits are shown in the table below.

Table 4. The current account deficits

Year	Current account (% of GDP)	Current account deficit in billion euros, current prices	Current account deficit in billion euros, constant prices*
2003	-4.8	0.5	0.6
2004	-9.7	1.1	1.3
2005	-16.0	2.1	2.5
2006	-24.2	3.1	3.5
2007	-16.7	2.6	2.9
2008	-18.7	2.2	2.3
2009	-3.6	0.3	0.3
SUM	-93.7	11.8	13.4

Source: CBI. * Denotes present values in 2009 using a discount rate of 5% per annum.

When summed up, the deficits come to 11.8 billion Euros using July exchange rates for each year and 13.4 billion Euros in present value (2009) terms using a 5% discount rate. This amounts to 160% of GDP in 2009. However, the national dissaving does not show up in the country's net external debt, suggesting that this has been paid for by creditors.

However, we should note that two of the largest commercial banks are now in foreign ownership and the country's credit rating has been shattered; government debt is now listed as non-investment grade by Fitch. The government's access to international financial markets was initially curtailed, but a couple of private sector firms have recently been able to borrow at international capital markets at reasonable rates. However, the government has taken on very significant debt, making drastic expenditure cuts and tax increases necessary.

2.14. Domestic losses and the government debt

The collapse of the banking system has caused significant redistribution of wealth within the country. The collapse of the stock market has reduced wealth and the collapse of the currency and the ensuing inflation has increased both household debt and business debt because of indexation to the CPI and exchange rates. The market capitalisation of the stock market was equal to 200% of GDP at the end of 2007 (Olafsson and Petursson, 2010), with a 75% decline in the stock market index, we can roughly estimate that the wealth lost amounted to 150% of GDP. These losses were born by domestic stock owners and also to a large extent by the estate of the failed banks in the form of loan losses, which affects the foreign creditors.

More importantly, household debt was around 100% of GDP according to the CBI (225% of disposable income) of which 13% were foreign currency loans that doubled when measured in domestic currency from the beginning of 2008 to the end of 2009. Around 80% of household debt was indexed to inflation and the price level increased by 27% from the beginning of 2008 to the end of 2009. Non-financial business debt was over 300 percent of GDP at end of 2007, and around 70% of bank loans to businesses are foreign exchange linked.

The government reduced its debt during the bubble years, and gross general government debt was only 29% at the end of 2007. The government has taken on debt during the crisis. It helped recapitalise the banking system by injecting an amount of 12% of GDP into the new banks and it had to recapitalise the CBI by an amount of 11% of annual GDP (see Olafsson and Petursson, 2010). In addition there is the Icesave debt. Thus the direct cost of the bank crisis is 40% of GDP and the total liabilities of the government due to the crisis 63% of GDP (using the 40% gross figure for Icesave).[35] There are also the operational deficits in 2009 and 2010, amounting to 12.6% of GDP in 2009 and 9.2% in 2010. Total general government debt now stands at around 120% of GDP and net debt amounts to 77% of GDP.[36]

We can conclude that although the external debt situation appears to be manageable, the banking crisis has caused a very significant rise in the level of government debt as well as a redistribution of wealth within the country. We will now analyse some of the lessons of the episode. We start with what we call the small country syndrome.

3. THE SMALL COUNTRY SYNDROME

Backing up a banking system of 143 billion euros was an economy with an annual GDP of only 14 billion euros, shrinking to 10 billion euros when using current exchange rates. The country's

[35] In comparison, the total cost of saving the Irish banking system amounts to 50 billion Euros which is around 25% of GDP.
[36] This is the IMF estimate and excludes less liquid assets. The OECD estimate of the net debt position, reported in Table 10 below, includes the less liquid asset and is 45% of GDP at the end of 2010.

currency, the krona, defined one of the world's smallest currency area. The institutions set up to conduct economic policy and to monitor and regulate the monetary economy were miniscule in spite of having identical names to their sister institutions in much larger economies. The small population makes it necessary for individuals to do multi-tasking, to attend to a diverse set of tasks and have personal responsibilities that exceed those of individuals living in larger countries. Moreover, personal relationships and affiliations often get in the way of professional conduct and did so before, during and after the collapse of the banking system.

3.1. Monetary and fiscal policy during the boom years

The rapid growth of the banking system created a rapid expansion of domestic credit which made average share prices rise at an annual growth rate of 43.7% between 2003 and 2007. In comparison share prices rose on average by 4.5% in Ireland, 3.7% in the U.K. and 5.5% in the U.S. over the same period. There was also a smaller scale housing bubble, where house prices grew by an average of 16.6% per year nominally during this period. In comparison, house prices rose on average by 4.3% per year over the same period in Ireland, 5.3% in Spain, 4.6% in the U.K. and 3.2% in the U.S. (*OECD*).[37] Simultaneously, aggregate demand increased as well, private saving fell and the current account deficit was 14.3% (*Statistics Iceland*) on average over this period, reflecting rapid consumption and investment growth.

The real economy expanded during 2003-08, mostly driven by the expansion of credit in the banking system. As a result, investment grew in excess of 20% per annum in 2004-2006, then collapsed in 2008 and 2009. Consumption, in contrast, only grew slightly more rapidly than real GDP in 2003; less rapidly in 2004 and 2006 and more rapidly in 2005. Imports grew much more rapidly than exports, leaving a gaping current account deficit. Unemployment declined from 3.4% in 2003 to 1% in 2007, there was solid real wage growth and real exchange rates reached record levels in 2007 only to collapse in 2008 and 2009. In Table 5 we summarise the macroeconomic developments in Iceland during the expansion of the banking system.

The government lowered corporate taxes from 30% to 18% at the end of 2001 and in February 2008 further to 15%. The government also lowered the personal income tax rate by 1% in each of the three years 2005, 2006 and 2007, abolished property taxes and lowered the value added tax in 2007.

In line with prevailing orthodoxy at the time, monetary policy employed one policy instrument, the policy rate, to achieve the inflation target of 2.5%. The CBI was never successful in this, and ever increasing interest rates were matched by persistently high inflation and strengthening currency. One explanation is that businesses and to some extent households evaded the high domestic interest rates set by the CBI through foreign currency borrowing. Foreign banks also issued ISK bonds to sell to foreign investors, hence giving investors the opportunity of taking advantage of the interest rate differential through carry trade. The potential for an eventual depreciation of the currency appears not to have been a deterrent to this development. Hence the increased undertaking of un-hedged exchange rate risk not only helps explain the rapid expansion of the banking system but also the ineffectiveness of monetary policy. As a result the CBI decided to raise interest rates from 5.3% in 2003 to 15.5% in 2008. This had the unfortunate effect of inducing even more firms and households to borrow in foreign currencies – which made the CBI increasingly concerned about the balance sheet effect of any depreciation of the currency.

To make matters worse, inflation targeting appears to have made the CBI respond asymmetrically to falling and rising exchange rates; raising interest rates to counter depreciations, which would have raised inflation above its target level, and not lowering them to counter appreciations, which

[37] However, house prices had more than tripled from 1995 to 2003 in Ireland, almost doubled in Spain and more than doubled in the U.K. from 1995-2003 while they increased by 84% in Iceland and 72% in the U.S.

helped attain the target. The asymmetric policy response created an implicit put on the currency making the carry trade with Icelandic krona denominated bonds even more lucrative and less risky. This resulted in a huge increase in carry trade with the Icelandic krona as the high yielding currency. In the end the stock of bonds held by foreigners denominated in the domestic currency amounted to 40% of GDP just before the crash in October 2008 (CBI, Monetary Bulletin, 2009).

Table 5. Macroeconomic developments

	00	01	02	03	04	05	06	07	08	09	10
Growth of GDP (%)	4.3	3.9	0.1	2.4	7.7	7.5	4.6	6.0	1.0	-6.8	-3.0
Consumption growth (%)	4.2	-2.8	-1.5	6.1	7.0	12.7	3.6	5.6	-7.9	-16.0	0.6
Investment growth (%)	11.8	-4.3	-14.0	11.1	28.1	35.7	22.4	-11.1	-20.9	-50.9	-8.9
Nat. expenditures (% of GDP)	5.9	-2.1	2.3	5.7	9.9	15.8	9.0	0.2	-8.9	-20.7	-1.9
Export growth (%)	4.2	7.4	3.8	1.6	8.4	7.5	-4.6	17.7	7.1	6.2	-0.6
Import growth (%)	8.6	-9.1	-2.6	10.7	14.5	29.3	10.4	-0.7	-18.2	-24.0	1.7
Gov. Surplus (% of GDP)	1.7	-0.7	-2.6	-2.8	0.0	4.9	6.3	5.4	-0.5	-12.6	-9.2
Unemployment rate (%)	1.3	1.4	2.5	3.4	3.1	2.1	1.2	1.0	1.6	8.0	8.6
Participation rate (%)	78.1	78.5	78.9	78.9	78.7	79.1	79.0	78.5	79.1	76.6	76.8
Unit labour costs (%)	-	5.6	6.2	2.3	5.1	5.6	9.6	9.4	3.5	-0.3	6.5
Inflation rate (%)	5.0	6.7	4.8	2.2	3.2	4.0	6.8	5.0	12.4	12.0	5.9
Real exchange rate	100.0	87.3	91.7	96.0	98.1	111.4	104.2	108.6	85.5	70.0	73.3
Interest rates (%)		14.4	12.2	8.6	8.3	11.0	13.9	16.0	17.8	14.1	7. 8
M3 growth (%)*	11.2	14.9	15.3	17.5	15.0	23.2	19.6	56.5	38.3	-5.6	-5.3
Lending growth (%)**	17.2	19.2	3.2	11.4	19.9	31.1	31.0	22.7	--	--	--
Current account (% of GDP)	-10.2	-4.3	1.5	-4.8	-9.8	-16.1	-23.8	-16.2	-17.5	4.5	2.7

Source: Monetary Bulletin, CBI. *) non-indexed bank loans **) credit system lending.

The perverse effects of monetary policy in Iceland resemble those in Hungary where foreign currency loans to households increased by 50% from 2005 to the middle of 2007 and then again until the end of 2008 due to exchange rate movements (Central Bank of Hungary) 38. The Hungarian central bank had to increase its policy rate from 7.8% in 2007 to 8.68% in 2008 to protect balance sheet. As in Hungary, the CBI had to increase its policy rate, which rose from 13.20% in 2007 to 18% after the collapse in 2008 in order to protect the balance sheets of non-financial businesses. As in Hungary, monetary policy was not effective at containing domestic demand, the creation of credit, increased leverage or the stock market bubble but it did cause a greater inflow of capital and currency asymmetries in the balance sheets of businesses and households.

3.2. Flexible exchange rates and the recovery

The macroeconomic developments following the collapse of the financial system in Iceland have been typical, in that changes in output, unemployment, asset prices and government deficits and debt have followed the stylised pattern highlighted by Reinhart and Rogoff (2009). However, the ensuing recession has up to now been significantly milder than feared at the onset of the crisis.

[38] During the former period the forint lost less than 0.5% of its value, so this was in fact a significant increase of foreign currency loans. In the latter period the forint lost about 8% of its value so a part of the increase in foreign currency loans comes from that.

Table 6 below shows real GDP growth (quarter to quarter) and unemployment in Iceland and a group of euro-zone countries that are facing difficulties in 2010 from the first quarter of 2007 to the first quarter of 2010 (seasonally adjusted). The contraction of the real economy in Iceland is mild in the light of the much larger shock that hit its economy. Note that cumulative negative growth since the first quarter of 2008 is greater in Ireland than in Iceland but lower in the other three countries. The adjustment of the real economy is also reflected in the unemployment figures with unemployment being lowest in Iceland in the third quarter of 2010 at 7.9%.[39] The reason for the mild downturn suffered by Iceland can be partly found in the flexibility of its real exchange rate. Net exports in Iceland went from negative 14% of GDP in the last quarter of 2006 to positive 14% of GDP in the last quarter of 2009, an improvement of 28% of GDP. They grew by 11.3% in 2008 and 11.7% in 2009; mostly because of lower imports which fell by 18.2% in 2008 and 24.1% in 2009 while exports increased by 7.1% in 2008 and 7.4% in 2009. The improvement in net exports manages to offset some of the effect of collapsing investment and consumption. Investment in real terms fell by 20.9% in 2008 and 50.9% in 2009 while consumption fell by 7.9% in 2008 and 16.0% in 2009 (OECD). .[40]

Table 6. Growth and unemployment in selected countries (Seasonally adjusted)

Year	2008				2009				2010		
Quarter	1	2	3	4	1	2	3	4	1	2	3
GDP growth											
Greece	0.2	0.3	-0.2	-0.4	-1.1	-0.4	-0.7	-1.1	-0.6	-1.7	-1.3
Iceland	**1.8**	**-0.8**	**2.4**	**-3.6**	**-2.4**	**-0.8**	**-4.2**	**-0.3**	**-2.6**	**-0.3**	**1.2**
Ireland	-2.7	-1.8	0.3	-4.6	-2.8	-0.1	-0.3	-2.5	2.2	-1.2	..
Portugal	0.1	-0.1	-0.6	-1.4	-1.6	0.6	0.2	-0.20	1.1	0.2	0.3
Spain	0.5	0.0	-0.8	-1.1	-1.6	-1.1	-0.3	-0.2	0.1	0.3	0.0
Unemployment											
Greece	7.8	7.5	7.5	7.9	8.8	9.2	9.7	10.2	11.1	12.2	-
Iceland	**2.2**	**2.5**	**3.1**	**4.6**	**6.8**	**7.2**	**7.4**	**7.7**	**7.2**	**6.9**	**7.9**
Ireland	4.9	5.5	6.9	8	10.2	11.8	12.5	13	12.9	13.5	13.9
Portugal	7.5	7.7	7.9	7.9	8.8	9.4	10.1	10.2	10.5	11	11.1
Spain	9.2	10.5	11.8	14	16.6	17.9	18.6	19	19.3	20	20.5

Source: OECD. Quarter-to-quarter growth. Harmonised unemployment rates. Seasonally adjusted data.

However, the floating currency has been a mixed blessing during the post-crash phase. The outstanding Icelandic krona currency bonds used for carry trade amounted to about 40% of GDP at the time of the collapse, which made capital controls necessary according to the CBI and the IMF, as well as high interest rates which were raised to 18% after the collapse in order to stabilise the currency because of likely balance sheet effects of further depreciation. Significant amounts of funds held on deposit in the banking system also suggest that domestic agents prefer to wait for the opportunity to expatriate their capital rather than invested it domestically. This lack of confidence represents one of the biggest challenges for the government.

[39] This refers to the survey based unemployment rate. Registered unemployment was 8.2% in December 2009 and reached 9.3% in February and March 2010. The differences are caused by the rather unusual definition of the number of unemployed and the workforce used by The Directorate of Labour. The number of unemployed is defined as the total number of working days paid by the Unemployment Insurance Fund regardless whether or not the person receiving benefits has a part-time job or not. The estimation of the work force is based on the number of working days rather than the number of people willing to work.

[40] This is consistent with the results of a recent study by Olafsson and Petursson (2010) that explained the variation in the post-crisis experience of a sample of 46 countries and find that greater exchange rate flexibility coincided with a smaller and shorter contraction but at the same time increased the risk of a banking and currency crisis.

3.3. Size and quality of institutions

The institutions that were supposed to manage, supervise and regulate the economy and the financial sector were not up the task of dealing with an international banking system. Instead, their size reflected the size of the local economy. In contrast, the banks became large in just a few years and dwarfed the local institutions.

Table 7. Number of employees at the three large banks, end of 2007

	Domestic	Foreign	Total
Glitnir	n.a.	n.a.	2248
Landsbankinn	1512	1302	2814
Kaupthing	1262	2072	3334
Total	n.a.	n.a.	8396

Source: Icelandic Financial Services Association, FME.

The prime minister's office was officially responsible for economic policy. However, it had only 20 employees before and during the banking collapse. The Ministry of Commerce was in charge of the Financial Services Authority (FME), the setting of rules and regulations and their application. While the ministry only had 20 employees, the FME, which had only about 47 employees in September 2008, increased the number of employees to about 68 during the crash, compared to the 3000 or so employees at the British financial services authority, the FSA. The CBI had a total of 115 staff members.

Table 8. Economic policy making, number of employees (end of August 2008)

Office of the prime minister	26
Ministry of Commerce	20
Financial Services Authority (FME)	47
CBI	115
Total	208

Source: Ministry of Finance.

These numbers include all personnel, from security to catering to office workers to the economists and lawyers. The low number of specialist employees implies that there was limited expertise when it came to the management of financial crises, especially since this was the first severe crisis to hit the economy.

3.4. Lender of last resort

The lack of a credible lender of last resort in foreign currency was one of the Achilles heals of the banking system. As shown by Calafell and del Bosque (2002), the ratio of reserves to external debt is a good predictor of a currency crisis. This ratio was only around 8% at the time of the collapse, which is far below the safe level, for example the one given by the *Guidotti-Greenspan rule*[41] which dictates that reserves should equal short-term external debt (one-year or less maturity). The table below shows the ratio of reserves (excluding gold) to short term debt and the net external position of the country.

[41] Named after Alan Greenspan and Pablo Guidotti, the Argentine former minister of finance. See also Jeanne and Rancière (2006).

Table 9. Reserves, current account deficits and the net external position

	2003	2004	2005	2006	2007	2008	2009
Reserves/short-term debt (%)	33	47	26	13	10	8	7*
Net external position (% of GDP)	93.3	113.5	152.0	203.2	228.8	462.4	**

Source: CBI. * The short-term debt includes the debt of the banking system which is in receivership.
** Number missing because of the uncertain status of short-term debt of collapsed banking system.

However, the CBI went to great lengths to support the banking system when it came to liquidity in the domestic currency. The support was in the form of a sharp increase in collateralized lending, shown in Figure 3.[42] The banks were borrowing around 150 billion ISK at the beginning of the year 2007, but that had increased to well over 400 billion ISK in the summer of 2008 and topping off at close to 500 billion ISK (3,5 billion Euros) as the banks started to falter after the middle of September 2008.[43]

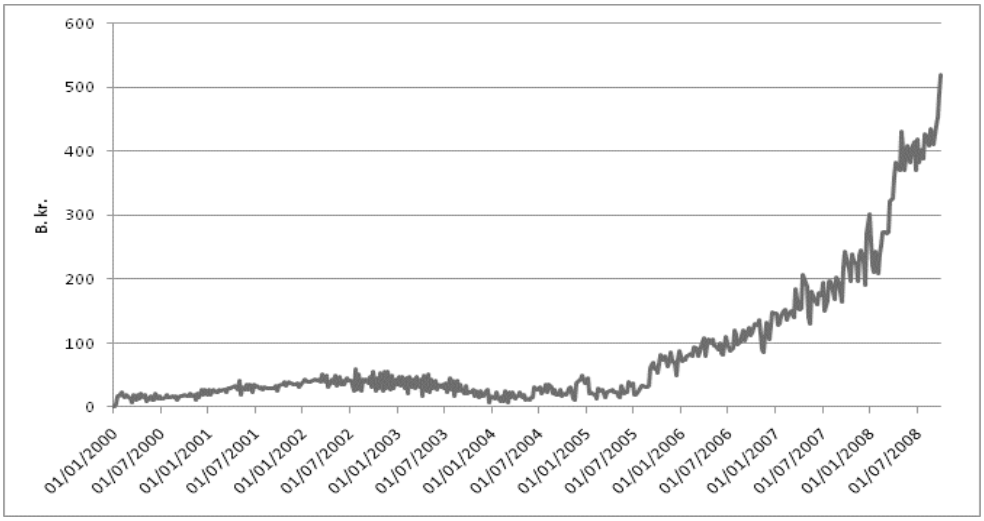

Figure 3. Collateralised loans to the financial sector

Source: BHG (2010).

As this lending increased and started increasingly to take the form of direct liquidity support it seems that the CBI ignored the inherited systemic risk. The banks used bonds issued by each other as collateral in their borrowing from the CBI; they even went so far as to swap bonds to then use as collateral with the CBI.[44] This collateral was referred to as *love letters*.[45] Since the collapse of one of the three big banks would have almost certainly led to the collapse of the remaining two banks, this effectively amounted to lending without any collateral at all. This was however not considered when the central bank accepted bonds issues by one as collateral for a loan granted to another. As a result, the collapse of the banking system caused the bankruptcy of the CBI and necessitated a capital infusion by the government of 1.2 billion euros.[46]

[42] The Central bank executed monetary policy by setting the interest rates on week long collateralised loans to financial institutions, as mentioned before no effort was made to evaluate simultaneously the liquidity need in the financial system.
[43] BGH (2010), chapter 4.
[44] BGH (2010), chapter 8.
[45] See Flannery (2009).
[46] The three big banks also got the smaller financial institutions in Iceland to help finance their business. Icebank, for example, bought bonds issued by the three large banks and used them as collateral to borrow money from the CBI. At the end of June 2008 its biggest creditor was Landsbankinn, second Kaupthing and third Glitnir Bank. Their combined debt amounting to over 12 times the equity of Icebank. This was done with full knowledge of the CBI, and even the public, as the bank manager of Icebank declared that this was their business model, that is to help the large banks finance themselves with borrowed funds from the CBI using their own bonds as collateral. Source: Viðskiptablaðið (Icelandic newspaper) January 18. 2008, p. 29.

In early 2008 the international rating agencies started to increasingly mention the lack of a lender of last resort in Iceland. As a reaction to that the CBI tried to increase their foreign reserves only to find most doors shut. The Bank of England, the European Central Bank and the Federal Reserve declined to open swap lines for the CBI in the spring of 2008. The CBI was able to get swap lines amounting to 1.5 billion euros with the central banks of Denmark, Norway and Sweden, but only after agreeing to unprecedented terms involving the government for example agreeing to a responsible budget policy.[47] In June it was clear that the terms for sovereign bond issuance in international markets were unacceptable to the CBI. The CBI then started boosting their reserves with short term – one to three month – note issuance. The only real loan came a few days before the failure of the banks when a German bank lent the CBI 300 million euros. [48]

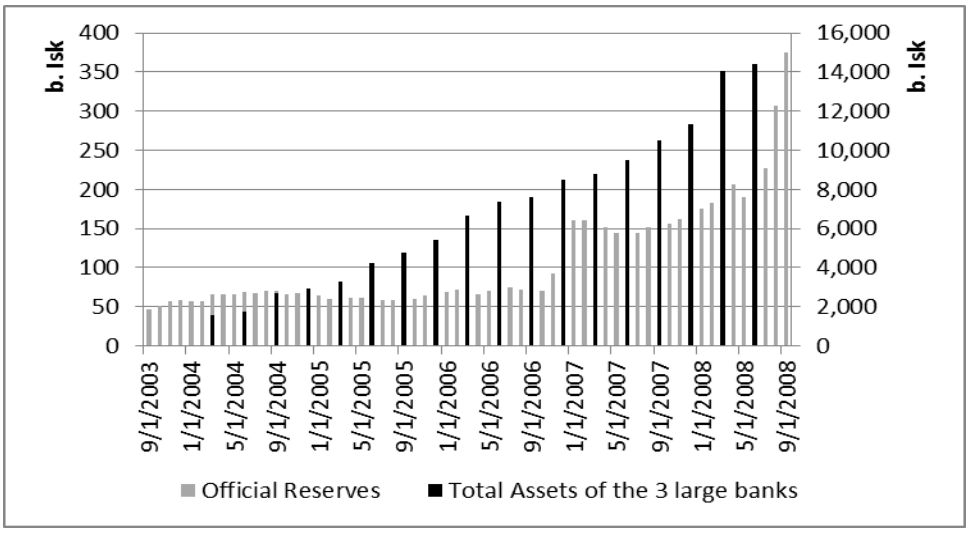

Figure 4. Reserves and bank asset

Source: BHG (2010).

In Figure 5 we show the ratio of reserves to foreign deposits of branches of the Icelandic banks. Clearly, the CBI did not have the resources to stop a run on these branches.

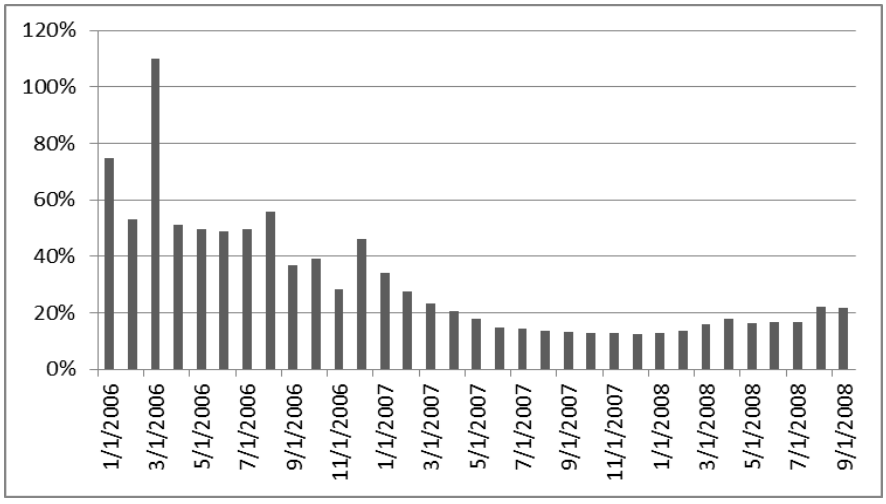

Figure 5. Reserves as a portion of foreign deposits

Source: BHG (2010).

[47] BGH (2010), chapter 4.

[48] Three German banks lent the money together, but Bayern LB was the largest creditor with 255 million euros.

In the end, the CBI did all it could to save the Icelandic banks. It almost exhausted its foreign reserves in process and ended up in effect bankrupt on account of the collateralized loans discussed above. But it did obviously not have the capacity to save the banking system.

The Icelandic banks got increasingly funding directly from the Eurosystem in 2008. The banks used among other instruments the so-called *love letters* as collateral for their loans with the Eurosystem. The ECB moved to limit those practices and abolished them completely by the end of July 2008. At the time the banks had borrowed around 4.5 billion euros from the Eurosystem with about a third of it collateralised with Icelandic bank bonds, or love letters. Among other assets used as collateral were bonds issued by special purpose vehicles (SPV) set up by the banks themselves. They transferred bonds into these SPVs, both foreign currency and Icelandic krona denominated, the SPV then did a currency swap with the Icelandic bank and the rating agencies rated the bond issued by them in euros. These bonds where used as collateral to get well over a billion euros from the ECB.[49] This practice infuriated the head of the Central Bank of Luxembourg as this of course meant that once the banks could not pay back their borrowings, they would also not honour swap agreements, hence the ECB would then end up holding collateral in ISK.[50] The governor is quoted as to have said "This practice will not go on – we will change the Eurosystem to avoid such practices."[51]

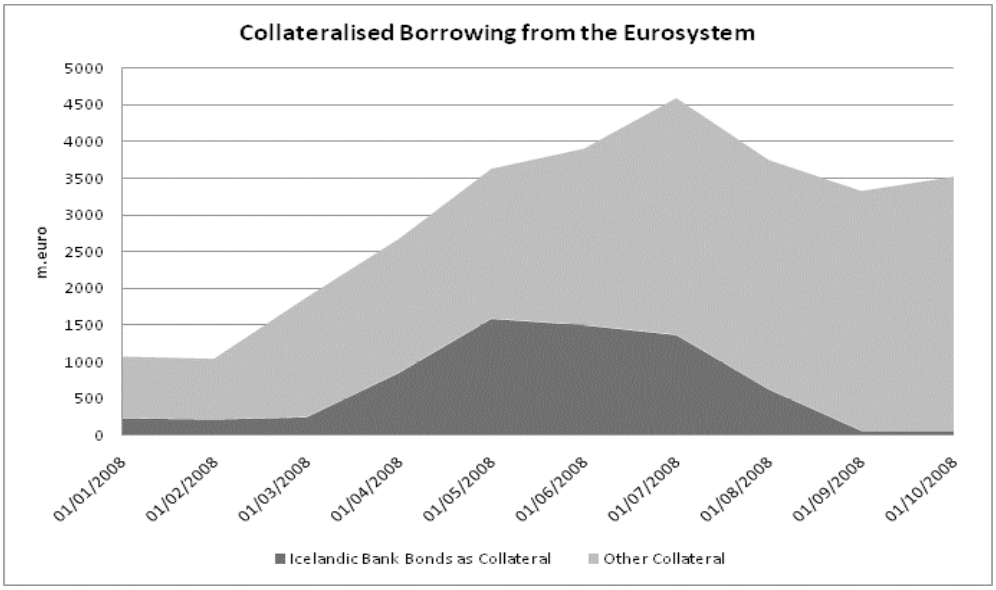

Figure 6. Collateralised borrowing from the Eurosystem

Source: BHG (2010).

3.5. Small population and personal relationships

Personal relationships and histories matter a lot in Iceland's small population. Individuals often end up with very diverse tasks through their working careers. In most cases they share a similar background when it comes to education and careers. Over time a strong web of alliances and personal networks is formed.

Instead of describing the details of these intricate relationships and alliances, we let the former CEO of Kaupthing's subsidiary Singer & Friedlander, describe the close-knit society:[52]

[49] When the banks failed they defaulted on the currency swap leaving the ECB with krona assets.
[50] Meeting note drafts from the Central Bank of Iceland from a meeting conducted in the Icelandic Central Bank July 4th 2008 with Yves Mersch, Nicolas Weber and Frank Bisdorff (BGH (2010), chapter 7.)
[51] See Sibert (2010).
[52] Thorvaldsson (2009), page 215.

> "Iceland's biggest problem throughout the crunch was a lack of trust; the internecine fighting in a small country, full of jealousy, pride and long-held grudges. People only joined forces when we had stepped off the precipice. The CEOs of the three banks didn't particularly like each other and didn't divulge much information. The relationship between Hreidar (Kaupthing's CEO) and Sigurjon of Landsbanki (CEO of Landsbanki) was particularly bad. The governor of the Central Bank didn't trust any of the CEOs and they certainly didn't trust him. To top it all Oddsson (the Prime Minister) wasn't particularly fond of the Chairman of the board of the FSA and was at daggers drawn with Bjorgvin Sigurdsson, the Minister of Banking. When openness was most needed, meetings were conducted like poker games."

3.6. Ireland and Iceland: More than just a letter difference

A comparison of Ireland and Iceland reveals interesting similarities and differences. Both countries experienced a rapid expansion of their banking system, financed largely through borrowing from other banks. In both countries the banking system became very large in comparison to the national economy, something we discuss further in Section 5 below. In both countries the domestic credit expansion created a house price bubble, which then caused a construction boom. However, there are several differences.

First, the stock market boom was much bigger than the house price boom in Iceland while the opposite was the case in Ireland. As a result Ireland experienced a much larger construction boom while Icelandic businesses mainly invested in each other and foreign businesses. The Icelandic bubble was thus most visible in share prices and balance sheets while the Irish bubble resulted in new houses being built inside as well as outside the country. Iceland also had its construction boom but this was dwarfed by the financial investments made by both banks and other businesses. See Figures 7 and 8 below which show that share prices rose significantly more in Iceland than in the comparator countries while house prices rose only slightly more in Iceland than in Ireland, but less than in the U.K. and Spain

Second, while the Icelandic banks did not have a lender of last resort in foreign currencies and defaulted after being cut off international credit markets, the Irish banks were saved by the ECB when it came to liquidity. However, this apparently came with the condition that the Irish would not let their banks default on their obligations. Pressure from multinational companies may also have helped convince the Irish government not to let the banks default. While the size of the Irish banking system was not quite as big in comparison to the national economy as the size of Iceland's banking system, the Irish banking system is nevertheless very large in relation to the national economy. Thirdly, Ireland is part of the euro zone while Iceland has its own currency while being a part of the EU's single market. This protected Ireland from a currency crisis but allowed Iceland to follow an independent monetary policy prior to the collapse and benefit from a currency depreciation following the collapse.

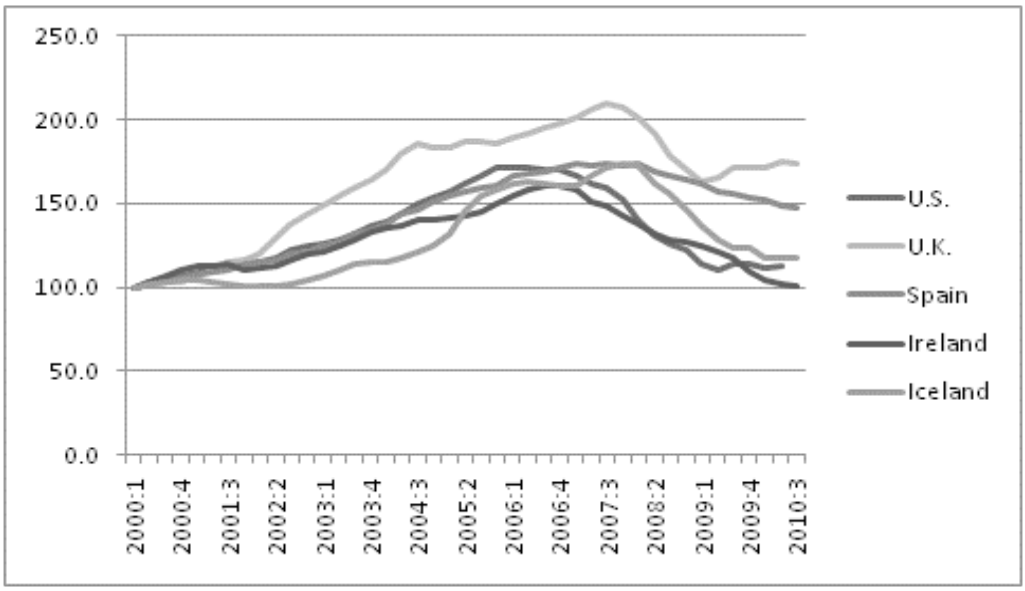

Figure 7. House price indices. Source: Statistics Iceland and Reuters Ecowin.

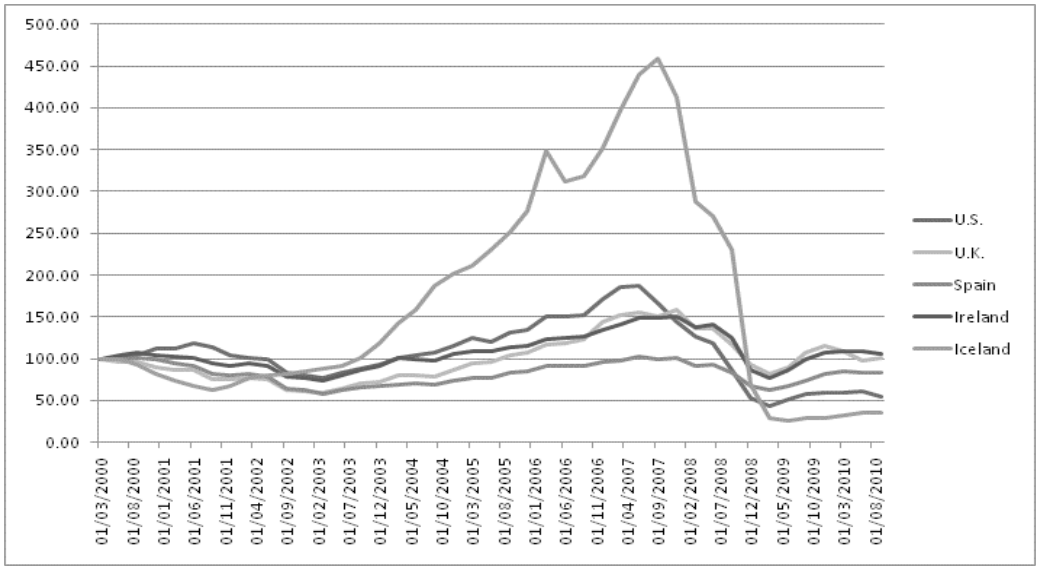

Figure 8. Share price indices. Source: IMF (IFS).

Tables 10 and 11 show the evolution of public debt, aggregate demand and output in the two countries. Table 10 reveals that although Iceland let – because it had no other option – its banks default, the general government nevertheless ends up with debt levels in the same range as Ireland. Secondly, from Table 11 we can see that lower imports reduce the effect of lower consumption and investment demand on output in both countries. However, the fall of consumption and investment is much larger in Iceland and so is the collapse of imports. The net effect is an output contraction of a similar magnitude in spite of the shock being much larger in Iceland. We should note, however, that the magnitude of the shock is not independent of the currency arrangements because the Icelandic banks failed partly because of the absence of a lender of last resort.

Table 10. Debt of general government

year	Iceland		Ireland	
	Net	Gross	Net	Gross
2005	13.56	52.57	6.45	33.20
2006	7.86	57.44	1.38	29.36
2007	-1.05	53.31	-0.28	28.93
2008	26.07	102.36	11.34	49.42
2009	39.77	119.54	28.63	72.67
2010	45.16	124.93	61.49	104.90
2011*	45.67	116.90	69.69	112.67
2012*	43.11	111.28	74.63	115.63

Source: OECD. *) predicted.

Table 11. Growth of aggregate demand and output

Growth rates	2007	2008	2009
Gross fixed capital formation			
Iceland	-11.1	-20.9	-50.9
Ireland	2.9	-14.3	-31.1
Private consumption			
Iceland	5.6	-7.9	-16.0
Ireland	6.3	-1.8	-7.2
Government consumption			
Iceland	4.1	4.6	-1.7
Ireland	7.3	2.8	-4.1
Exports			
Iceland	17.7	7.1	7.4
Ireland	8.2	-0.8	-4.1
Imports			
Iceland	-0.7	-18.2	-24.1
Ireland	7.8	-2.9	-9.7
GDP growth			
Iceland	6.0	1.0	-6.8
Ireland	5.6	-3.5	-7.6

Source: OECD

It remains to be answered whether letting the banks default was the optimal course of action for Iceland, but in a way the answer is simple: Iceland did not have any other choice, the capacity of the CBI in terms of liquidity support in foreign currencies and the capacity of the state in terms of injecting new equity in to the banking system fell far short of what was necessary to sustain Iceland's oversized banking system. The default of the banks then led to a currency crisis, mass insolvency of non-financial businesses that had borrowed in foreign currencies, complicated and acrimonious relationship with foreign creditors and a non-operational banking system for at least two years. Last but not least, the country's credit rating has suffered and government bonds are now graded as junk by Fitch.

Ireland's situation was different in that it had the European Central Bank for liquidity support. The ability of the Irish state to ensure the solvency of the banking system was subsequently tested in the autumn of 2010 and led to the country accepting a joint IMF-EU programme in December of that year. It remains to be seen whether Ireland can remain solvent without the banks' creditors

accepting some of the losses. Should Ireland follow in Iceland's footsteps in letting the banks default? Or leave the euro zone? Judged by Iceland's experience such a decision might set off a traumatic sequence of events, probably made even more difficult by the greater absolute size of the Irish banks and their inter-connectedness with other European banks. An exit from the euro would similarly cause mass insolvency of businesses and households who have borrowed in euros in recent years. For Ireland, there is no easy choice.

4. WEAK CAPITAL: THE KEY TO RAPID EXPANSION

Any explanation for the rapid expansion of Iceland's banking system and its ability to borrow amounts that were disproportionate to the local economy has to start with a description of how the banks managed to generate equity. Their relatively high capital adequacy ratios further facilitated borrowing in a world of cheap capital. Liquidity overflow in international markets and acceptance for increased leveraging assisted in this development as did inadequate supervision.

4.1. Inadequate supervision

When Iceland became a member of the EEA Treaty it adopted the EU's directives into Icelandic law. These directives provided a minimum coordination relating to the establishment and operation of financial institutions and for the principle of mutual recognition. The directives did not prevent Member States from maintaining or setting stricter rules in relation to the credit institutions in the home country as long as they satisfied the main objectives required by the provisions of the EU and the EEA Treaty. Icelandic authorities chose not to lay down stricter rules concerning the authorisation of financial institutions. Apparently, their objective was to improve the competitive conditions of Icelandic financial institutions in the single market.

The changes implemented by the Icelandic authorities brought its financial regulatory structure to a level similar to many other European countries (BGH (2010), chapter 21). In particular it:

- Increased authorisation to invest in non-financial businesses,
- increased authorisation to extend credit to directors,
- increased authorisation to invest in real estate and real estate companies,
- increased authorisation to lend money to buy own shares,
- reduced requirements concerning the operating structure of securities companies,
- increased authorisation to operate insurance companies, and
- increased authorisation for ownership in other credit institutions.

These changes amounted to relaxing requirements already in place in Iceland without violating the minimum requirements of the EU Directives. It is clear that these changes were not decreed by the directives. Rather the main objective appears to have been to improve the competitive position of domestic financial institutions and to make domestic legislation at least no more restraining than legislation in neighbouring countries. In short, the regulatory changes were consistent with the policy of making Iceland a financial centre.

4.2. Leverage Cycle

Many of the changes implemented made it easier for commercial banks to participate with their clients – who sometimes were also their owners – in leveraged buyouts, bringing their operations closer to investment bank operations. This set the stage for the rapid and unsustainable expansion of the banking system. As assets prices continued to rise, the price increases were leveraged further,

still increasing asset prices, creating a spiral of increased credit and higher asset prices. The stock market index quadrupled over the three year period from 2004 – 2007. At the same time average leveraging of stocks increased by 40 percentage points, which implies that credit to buy stocks increased at a much faster than the total market value of shares outstanding.

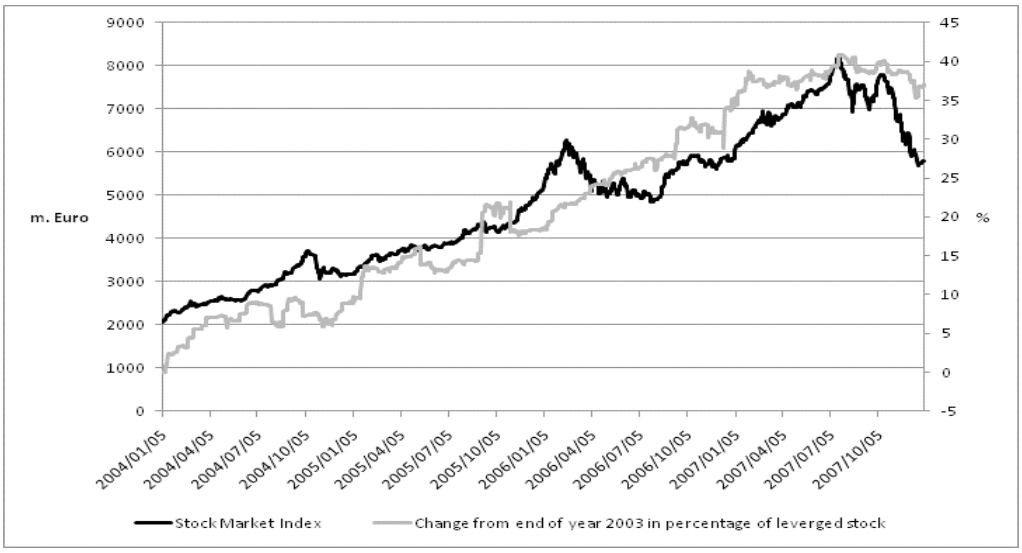

Figure 9. Stock prices and the share of leveraged stock

Source: BHG (2010).

Firms changed hands at prices well above their asset value, creating accounting goodwill. The growth of goodwill was fast, going up six fold in four years. It is worth pointing out that in 2006 holding companies had more goodwill than the fishing industry, where future fishing quota – the industry's main asset – is accounted for as goodwill.

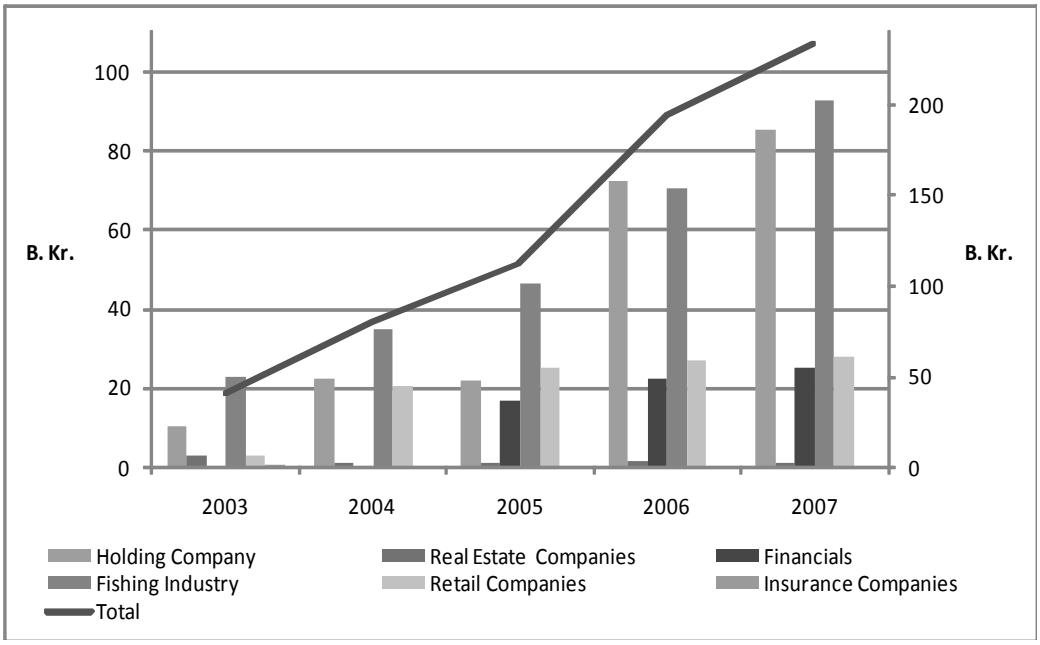

Figure 10. Goodwill by industry

Source: BHG (2010).

Banks leveraged heavily these value-inflated firms, and more often than not also participated in the investment. Once the liquidity crises hit in the middle of 2007 it was clear to the banks that a collapse of asset prices would have a big impact on them, both through their direct ownership of assets and through their lending which was highly collateralized in these overvalued assets.[53,54]

4.3. Capital created

Financial institutions are required to hold capital as a buffer against future losses. Over the period in question, the European capital adequacy directive (CAD), based on Basel I, was in force in Iceland. Under these regulations, financial institutions are required to hold a minimum amount of capital – broadly defined as the sum of tier 1 and tier 2 capital – equal to eight percent of risk-weighted assets. Tier 1 capital provides more loss absorption and is hence preferred to tier 2 capital, but is more expensive for the banks.

Because the CAD limits banks' leverage, they might like their capital-asset ratios to be lower than is specified by the directive. However, both supervisors and creditors would prefer them to be higher. In their annual accounts Glitnir and Kaupthing said that they aimed for over 11% while Landsbankinn aimed for above 10%. In the years prior to the crises the three Icelandic banks had on average Tier 1 capital ratio that was two or three percentage points higher than their internal aim and also two to three percentage points higher than other large Nordic banks (BGH, (2010) and Flannery (2010)).

When a financial institution increases equity, it is essential that the funding come from outside the financial institution, because otherwise the loss absorption of equity becomes illusory. For this reason, there are generally strict rules on such funding sources. In particular, it is generally considered unacceptable for a financial institution to lend money for the purchase of its own shares because this would increase the amount of core capital without in effect creating any kind of a buffer against losses. Consequently, this is illegal in most jurisdictions. In Iceland however, as described here below, collaterised lending was used to increase the banks' equity. This enabled them to borrow more money from international financial markets, as banks can leverage equity up to 12.5 times. Hence this facilitated the growth of the system.

As early as 2001 the banks cooperated in financing equity for each other in a non-transparent way. At the time one of the banks involved was still under government ownership. Kaupthing sold its own shares to an offshore company under the control of Landsbanki. Landsbanki lent the company the funds to buy the shares. This would appear to transfer risk from Kaupthing to Landsbanki, but that was not the case here, as the banks finalized this transaction by promising to funnel all dividend payments back to Kaupthing and then Kaupthing promised to buy back the shares in 18 months. In addition there was a contract of difference made to cover changes in the price of the stock, but that contract was done between Landsbanki and Kaupthing because otherwise it would have been in breach of international accounting standards.[55] Hence all the risk of the own shares was transferred back to Kaupthing, and should have then been deducted from Kaupthing's equity. This transaction amounted to 5-7% of Kaupthing's issued equity at the time.

Other notable capital creation is that Landsbanki hedged its employee's stock options in a number of offshore firms. These firms accumulated in less than 10 years more than 13% ownership in the bank. As Landsbanki carried the risk of financing all these shares directly or indirectly, they should have been deducted from the bank's equity base.

[53] See Aliber (2010).
[54] A report by Merrill Lynch in March 2006 also describes how falling asset prices may affect the banks. The report says that: "We cannot recall of a single other instance in Europe of where banks hold such substantial stakes in the local market (not to mention significant holdings of their own shares, for whatever reason) or where they have to justify such an unusual state of affairs. Our point is merely that if the stock market were to decline rapidly, it would certainly impact the equities that the banks are apparently holding as hedges (such as they are), as well as the client portfolios, wherever they are. See Merrill Lynch, "Icelandic Banks: Not What You Are Thinking," 7. March 2006, page 12.
[55] As noted in an email between two employees of the banks, see BGH (2010), chapter 9.

In all it has been estimated that the banks carried the risk of approximately 25% of their total capital on their own balance sheet, mostly through direct collateral with no other assets backing the loans. This amounted to approximately 50% of core capital (see BGH (2010)). There was also risk due to cross financing, that is bank A financing shares in bank B. Under normal circumstances this may be considered to be standard practice. In a small system, with only three major banks, which are exposed to very similar risks, this becomes a problem. If this kind of cross financing is taken into account the weak capital in the three banks goes up to 70% of core capital (BGH (2010), chapter 21).[56,57]

5. A POST-MORTEM: SIZE AND GROWTH IN AN INTERNATIONAL PERSPECTIVE

Both the size of the financial sector and its rapid growth posed a risk in Iceland. Either one of those risks could have caused the failure of the banks, combined they proved potent.

The size of the financial sector rendered the CBI incapable of being the lender of last resort for the banks. In comparison to other countries the Icelandic financial sector was very large with the combined assets of the three large banks over seven times GDP at the end of year 2007. In comparison the financial sector in Ireland was at the same time less than seven times GDP, in Denmark only about two times GDP and in Hungary just over one GDP. It was clearly not possible for the CBI to keep sufficient reserves of foreign currency to be a credible lender of last resort. Moreover, it was even considered to be unnecessary given the high sovereign rating and ignoring the fact that imminent financial crisis would always keep investors from lending irrespectively of credit ratings. This led to a large financial system with no lender of last resort, and history has shown that runs on banking systems occur when they have no credible lender of last resort, irrespective of the solvency of the banks.

Table 12. Size of the Financial Sector (total Assets % of GDP)

	Iceland	Ireland	Hungary	Denmark
2004	238%	459%	82%	180%
2005	376%	565%	92%	185%
2006	534%	653%	103%	197%
2007	744%	681%	113%	232%
2008*	865%	825%	128%	262%

* End of August 2008 for Iceland
Source: OECD, CBI, Central Bank of Hungary.

But were the Icelandic banks solvent at the time of their collapse? This is something that is very hard to answer with full certainty. There are however strong indications that they were not, and may have even been insolvent for some time prior to their failure.[58] One of the reasons may have been their fast growth in the years before the collapse, which resulted in adverse selection of customers, poor underwriting standards and looting as discussed above.

The Icelandic banks grew very fast in the years before their collapse. The balance sheets of the three large banks grew over 50% on average during the years 2004-2008. This growth was not common among other international banking institutions, see table 11. The much talked about Irish banks did not grow at this rate, with the two largest Irish banks, Allied Irish and Bank of Ireland, growing less than 20 percent on average per year and the Anglo-Irish bank growing at a rate of 34%

[56] FME "Rules on additional own funds items for financial undertakings", No. 156 of 26 January 2005 Article 4.
[57] In Iceland long term subordinate debt was allowed as of January 2005 to count towards 33% of tier 1 capital while in most other European countries this is closer to 15%. Clearly, financing with long term subordinate debt is easier than with equity. (EU Directive 2006 –48-ec)
[58] BGH (2010) also support this.

per year. The growth of the Icelandic banks cannot be attributed to mergers and acquisitions, as the SIC calculated that the average annual organic growth of the banks was still between 39 and 47%.

Table 13. Average Annual Asset Growth 2004-2008*

Kaupthing	61%
Glitnir	50%
Landsbanki	51%
Anglo Irish	34%
Danske Bank	17%
Swedbank	13%
Bank of Ireland	17%
Allied Irish	18%
OTP (Hungarian General Savings Bank)	22%

Source: Thomson One Banker *Icelandic banks up to mid year 2008. * Icelandic banks up to mid year 2008.

This growth resulted among other things in rapid credit growth in the domestic market as shown in Figure 11 below.

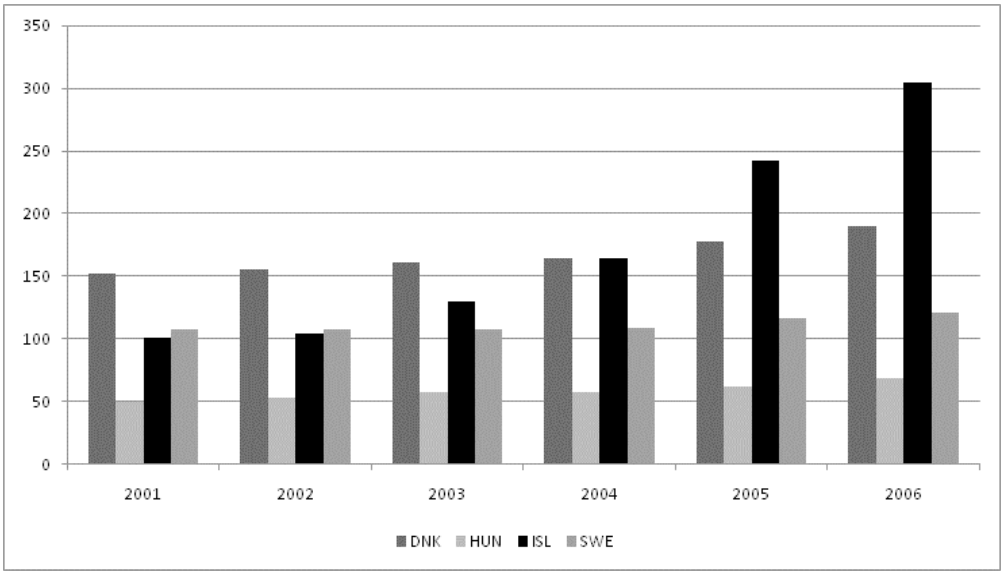

Figure 11. Domestic credit growth by banking sector (% of GDP)
Source: World bank

Research supports the hypotheses that rapid lending growth may lead to diminished quality of the lending book. This leads among other things to increased future loan losses, as described in Jiménez and Saurina (2006). Adverse selection of customers is one of the reasons, in addition to poor underwriting standards and poor record keeping (BGH 2010, Flannery 2010). The Icelandic banks did not meet the rapid credit expansion by increasing their allowances for loan losses, quite on the contrary. For 2006 and 2007 their loan loss allowances were around 0.8%, while at the same time Danske Bank put about 1.45% into loan loss allowances.[59]

During this time the regulator in Iceland focused on the banks capital to gauge their financial wellbeing, which was high in comparison to banks from other countries, as shown in Figure 12. This capital was however to a large extent self-financed, as described in Section 4 above, and hence a much weakened buffer against any potential losses. This focus on capital ratios prevented the regulator from investigating further the quality erosion that was occurring in the banks lending books.

[59] Loan loss allowance of gross loans.

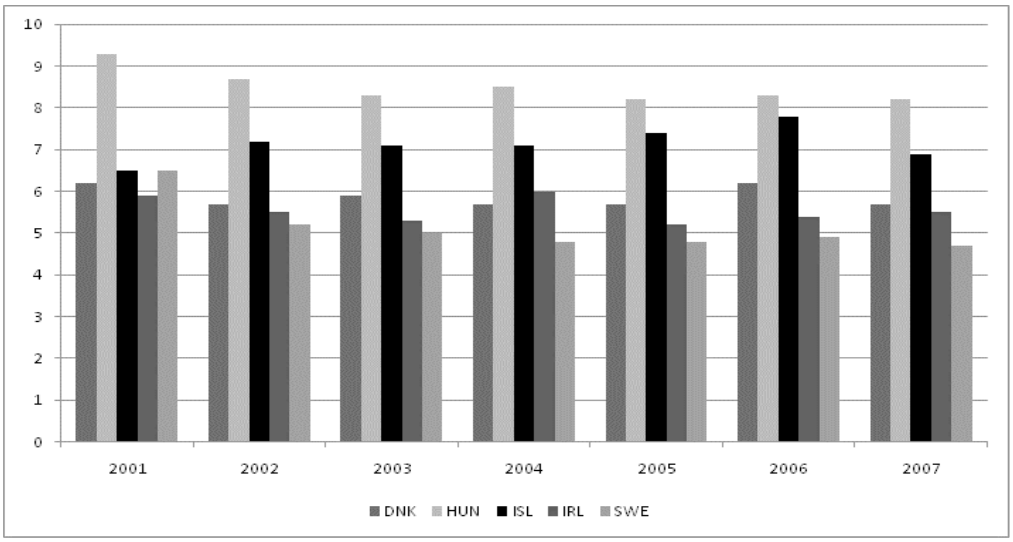

Figure 12. Bank capital to assets ratio %
Source: World bank

It was not until the banks had failed, that the poor quality of their assets became apparent to regulators and the CBI.[60] Among the worst performing assets were loans for own securities into limited liability firms, loans to the banks biggest owners and investment bank operations which were highly correlated with other operations of the banks. The assets were in fact so interconnected that when one became worthless the rest of them fell like dominos. The first independent assessment of the assets of the banks resulted in a recommended 62% write down.[61] This amounted to almost five times Iceland's GDP. This does indicate that the bank run that occurred was on insolvent banks.

6. IMPLICATIONS FOR EU FINANCIAL REGULATION AND STABILITY

The collapse of Iceland's banking system and its effect on neighbouring countries has revealed weaknesses in the European passport system. The European passport system allows banks to compete and enjoy economies of scale by operating in other countries, hence diversifying risk and increasing competition. The regulatory structure around the system is intended to even the competitive position between institutions domiciled in different member states. A logical conclusion of the single market project is that financial institutions from one member state can operate in all member states. The established financial centres in Europe have centuries of experience in cooperation in regulation and crisis resolution. For countries with long established financial centres, an optimal arrangement would have their banks operating in each other's jurisdictions and in the less financially developed countries, while banks from outside the club would not be allowed to operate within their borders unless subject to specific restrictions.

The European regulatory system has been severely criticized in recent official reports, such as Larosiere (2009) and Turner (2009), but here we would like to only identify those weaknesses that pertain to the case of Iceland. The primary issue here is the fragmented nature of supervision and the notion that the home supervisor is the only one possessing both information and adequate supervisory powers over the mother bank and its international bank branches, which puts considerable faith in the ability of national supervisors.[62]

[60] The SIC commission indicates that the banks knew much earlier. For example the largest creditor in the system was having trouble in late 2007 and by March 2008 it was clear that some action was needed to prevent complete default.
[61] (BGH 2010, chapter 11). The write down ended up being a little lower than this.
[62] Subsidiaries are supervised by host country.

A thorough analysis of the readiness of the EU to act in the eventuality of a crisis and its actions when the crisis occurs is provided by Pisani-Ferry Sapir (2010). They note that the internationalization of European financial institutions had been growing at a rapid pace while the institutional structure of the EU had not kept up. Supervision remained almost exclusively national while information sharing was limited. "In the case of cross-border banking institutions, it is the central bank of the host country which bears the responsibility, regardless of whether the foreign bank operates as a branch or as a subsidiary on its territory" and "there is a distinct risk of insufficient flow of information and too little cooperation between home and host authorities in case of market stress."

6.1. Asymmetry in ability and enforcement

A key flaw in the EU passport is that regulations are pan-European but supervision is mostly in the hands of the home regulator.

If the home regulatory authority has less experience or faces weaker incentives to do proper supervision than the supervisory authority of the established banking nations, significant risk may be created for these established banking nations. This is particularly acute when a smaller country attempts to establish an international financial centre, as was the case with Iceland. If the established nations create a common regulatory structure that they find suitable for their interests, it may be too sophisticated and rely on particular assumptions that are not fulfilled in practice for other countries.

The lack of interest by the government in proper financial regulation and supervision affected the resources available to the regulator. One example of the limited ability of the FME was its lack of software and computers that would enable it to track such things as related-party lending.

The banks themselves clearly attached some value to the Icelandic supervisory standards. The banks were faced with significant costs because they were domiciled in Iceland and higher costs of funding because the accounts were in Icelandic currency and not euros. However, the benefits of an advantageous tax environment and lax supervision seemed to have outweighed the funding disadvantages.

Financial supervision can be approached either from a legalistic or a more principle-based method. In the specific case of the introduction of one of the Icelandic banks' internet accounts in Europe – the best known example being the Icesave accounts of the Landsbanki – the attitude of the Dutch National Central Bank were legalistic, while the Bank of France clearly was more pragmatic when it kept delaying the processing of Landsbanki's application to set up a branch in France.[63] However, we should note that these countries could not have delayed infinitely because of the EEA agreement. Iceland's FSA followed a purely legalistic approach.[64] Such a legalistic, and in our view, inappropriate position creates problems for the European passport project and the philosophy of the single market.[65]

There are many indications that the level of enforcement of the Icelandic supervisor (FME) did not meet best practices in the EU, and that the Icelandic banks did not hold it in high regard. If the letter of the law was not broken there was nothing that could be done. Foreign regulatory bodies and central banks seemed to work in a different manner. Thus the ECB refused to use *love letters* as collateral and the French kept postponing allowing branches to be set up.

[63] See chapter 17 of BGH (2010). The chapter cites minutes from a meeting of the governing body of the Icelandic Deposit Insurance Fund where it says that its French counterpart did not want to agree on assuming any responsibilities for deposit insurance (top up) when it came to the operation of the Icelandic banks in France. There were also delays in reaching an agreement with Sweden.

[64] The former head of the FME (FSA) when asked on TV what the purpose of this institution was responded by saying "ensuring the banks obey the law".

[65] Similar view is set forth in "The Turner Review," page 7, „Regulatory and supervisory coverage should follow the principle of economic substance not legal form."

6.2. The European passport system

The European Union is currently proposing to set up bodies tasked with monitoring and supervising financial institutions in Europe. These are the European Systemic Risk Board (ESRB), European Banking Authority (EBA) and European Securities and Markets Authority (ESMA).[66] These may go some way in solving the problems described in this paper.

Another option is to scale down the European passport by, for example, not requiring member countries to allow foreign branches or even subsidiaries. Such activities would be left to member countries to allow and supervise.

A third option is to modify the European passport to specifically take into account the externality identified by the case of the Icelandic banks.

1. First, deposit insurance should be in the home currency. This would reduce the attractiveness of branches of foreign banks – that is to say those domiciled outside the euro area – to depositors.
2. If a host supervisor provides deposit insurance that exceeds deposit insurance in the home country it should have shared supervisory responsibilities. This includes monitoring and the ability to refuse or scale down certain activities. However, this carries with it the danger of protectionism, since by providing deposit insurance, the host gains supervisory powers.
3. The systemic implications of any financial institution should be monitored. If a financial institution opts to operate in more than one member country, supervision needs to be exercised by either the sharing of supervision across countries or the establishment of a pan-European supervisor addressing those cross-border institutions. In this case, one could either ring fence the international operations or have common budgetary or resolution process.

In discussing Landsbanki, Lord Turner (2009) said, "Faced with that reality we either need more European coordination or more national powers – more Europe or less Europe – we can't stay where we are."

The key problem is what might be termed as the elephant in the closet: ultimately supervision depends on taxpayer support and taxpayers are unwilling to help institutions that have gotten into trouble in a third country. Since supervision follows the money, it has to remain at home. This has frustrated all attempts at creating a European supervisor, and is likely to continue doing so, unless the EU acquires significant budgetary powers. That said, both the European systemic risk board (ESRB) and the European System of Financial Supervisors (ESFS) are important steps forward. Many of the problems associated with the cross-border activities of the Icelandic banks would have been checked much earlier if adequate information sharing had been in place.

[66] Proposal for a Council Decision entrusting the European Central Bank with specific tasks concerning the functioning of the European Systemic Risk Board http://register.consilium.europa.eu/pdf/en/09/st13/st13645.en09.pdf.
Proposal for a regulation of the European Parliament and the Council on Community macro prudential oversight of the financial system and establishing a European Systemic Risk Board http://register.consilium.europa.eu/pdf/en/09/st13/st13648.en09.pdf.
Proposal for a regulation of the European Parliament and the Council establishing a European Banking Authority http://register.consilium.europa.eu/pdf/en/09/st13/st13652.en09.pdf.
Proposal for a Regulation of the European Parliament and of the Council establishing a European Insurance and Occupational Pensions Authority http://register.consilium.europa.eu/pdf/en/09/st13/st13653.en09.pdf.
Proposal for a Regulation of the European Parliament and of the Council establishing a European Securities and Markets Authority http://register.consilium.europa.eu/pdf/en/09/st13/st13654.en09.pdf.

7. POLICY CONCLUSIONS

The attempt by Iceland's authorities to establish an international financial centre ended in a collapse of the country's financial system in October 2008. The episode provides several lessons that are relevant for other countries.

There are implications to be drawn from the role of politics in the crisis. The banking system of Iceland was sold to political cronies at the turn of the century and the authorities subsequently changed the laws and regulations to facilitate the rapid expansion of the banks. The banks were affiliated with one or more political parties. The political connection and the support of the authorities increased managers' ability and incentives to extract private benefits of control while shifting risk to third parties, like domestic and foreign taxpayers and foreign creditors. These problems are exacerbated by symptoms of the small country syndrome.

Both the size of the financial sector and its rapid growth were a problem. The size of the financial sector rendered the CBI incapable of being the lender of last resort for the banks. This leads to a run on the system at some point with the probability one, with the predictable outcome of a failure irrespectively of weather the banks would have been insolvent or just illiquid. This is of course a situation that should be avoided at all costs.

The rapid growth of the banks was also unsustainable, as it was based on gearing up of equity that was in large part lent from within the system, hence false. Other research has also pointed out that lending books of rapidly growing financial institutions tend to be lacking in quality, leading to latent increase in loan losses.[67] Hence the Icelandic lesson backs up the notion that rapid growth of financial institutions should be monitored quite closely and even potentially hampered if the financial institution in question is systemically important.

The Iceland experience also shows some of the perils of floating exchange rates. Iceland exercised an independent monetary policy that consisted of raising interest rates during the boom years 2003-2008 to curb domestic demand in order to reach an inflation target of 2.5%. This created a large and growing interest rate differential with other countries that generated large volumes of carry trades. In addition, the interest differential made managers borrow at foreign rates to invest at domestic rates, recording the difference as profits. This made monetary policy ineffective at curbing demand. Also, the profits were used to justify the paying out of dividends, high executive salaries, and non-pecuniary benefits to management, and the leveraging needed to buy more businesses. The borrowing in foreign currencies made private risk become public risk. The eventual depreciation then made a large section of the economy insolvent.

Finally, some of the dangers from home country rule in European passport policy were revealed. For the European passport system to work, the home supervisor must be trustworthy. However, some countries may have the incentive to undercut standards of host countries. This calls for a minimum enforcement standard throughout the market by either the EU monitoring the quality of national supervisors or by direct EU-level supervision of cross-border banking. Moreover, deposit insurance should be in the home currency. Finally, the systemic implications of any financial institution should be monitored.

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