Skýrsla nr. C12:06

The financial strength of the deposit guarantee schemes in the EU and Iceland

Júlí 2012

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Introduction

On December 14th 2011, the EFTA Surveillance Authority (ESA) decided to refer its infringement proceedings against Iceland in the Icesave case to the EFTA Court claiming that Iceland had failed to comply with EU´s Deposit Guarantee Directive and/or the principle of non-discrimination. The Authority contends that Iceland was under an obligation to ensure payment of minimum compensation to Icesave depositors in Landsbanki's Dutch and British branches, and that domestic depositors were treated more favourably.

This report is written in relation to these proceedings. It has four main aims. First, to consider the Icesave claim in a macroeconomic perspective. Second, to analyse Deposit Guarantee Systems (DGS) in EU Member States and their ability to cope with crisis. Third, to analyse the Icelandic DGS. Fourth, to analyse situations where the DGS funds would fall short of total claims following a systemic crisis.

The report was written by the Institute of Economic Studies, University of Iceland.

Reykjavík 14th July 2012

Sveinn Aganarsson
Director

Summary

During the period 2001-2007, Iceland's three largest banks – Kaupþing, Landsbanki and Glitnir – experienced a very fast growth. By mid-2008, the combined assets of the three banks corresponded to 975% of GDP. Total deposits in all foreign branches amounted to ISK 1,332 billion when the Icelandic banks collapsed in October 2008. The lion share of these funds, or ISK 1,169 billion, had been deposited in Icesave accounts offered by Landsbanki in the UK and Netherlands.

The Icesave claims made by the British and the Dutch corresponded to 44% of GDP in 2008. If these claims are calculated in reference to other countries' GDP in 2007 it may be shown that such a relative burden would have amounted to €900b for the UK and €250b for the Netherlands. The claims represented 138% of government revenue in the year 2008 and 160% of the currency reserved held by the Central Bank at the end of October 2008. The Icesave claims implied more than doubling of foreign public sector debt. Further, the claims amounted to €13,600 per capita or to €54,400 per family of four, 33% of the equity of Icelandic homes in 2008, and 56% of average take-home wages in that year.[1]

In Europe the EU the Directive 94/19/EC on Deposit Guarantee Schemes (DGS) entered into force in 1994. The Directive has the aim of maintaining financial stability by strengthening depositor confidence and protecting their wealth. This is done by establishing DGS which reimburse deposits up to a certain ceiling, the coverage level, if a bank failure occurs. In Europe, there are basically two types of funding mechanisms for DGS, ex-ante and ex-post. In ex-ante DGS, the banks pay contributions on a regular basis to build up a fund available to depositors in case of a collapse. In ex-post funds the banks only contribute after a failure. This means that the relevant DGS are empty and hold no assets and implicitly assumes that the banks that remain after the crisis will pay the cost if a bank failure occurs rather than contribute to the fund beforehand. In 2007, 21 Member States had ex-ante DGS funds but six Member States (AT, IT, LU, NL, SI and UK) had ex-post DGS.[2].

The coverage ratio is defined as the ratio between the size of ex-ante accumulated funds and eligible deposits. In 2007, this ratio varied between 0.01% and 2.32% in Member States in 2007. The simple average EU coverage ratio was then 0.73%, while the average was 0.24% if a weighted measure was used. Thus, if a failed bank has more than 2.3% of the eligible deposits, no DGS would have been able to reimburse the deposits by itself and while the average DGS can only withstand a bank failure amounting to 0.73% of the covered deposits, the average ability on an EU wide scale is even lower or only 0.24%. From this it may be concluded that the DGS in the European Union are almost empty and can only cope with a minor banking failure with the resources immediately available. An Impact Assessment

[1] According to OECD (2009), average annual take-home wages of single individuals without children was ISK 3.1 million in 2008, while take-home wages of married couples with 2 children amounted to ISK 4.7 million. As the Icesave claims represent ISK 2.1 million per capita, this corresponds to 44.0% and 66.8% of the average take-home wages of singles and married/cohabiting individuals respectively.

[2] Source: JRC report, p. 29

report, published in 2010 by the Commission, delicately concludes that "ex-ante funds alone may not be sufficient to pay out depositors".

Our calculations indicate that an average DGS could cope with the collapse of a bank sized 0.3% to 1.6% of the banking system, depending on the funding cost of the DGS and the recovery ratio of the estates. This is a large increase from the 0.24% banking failure the DGS can cope without receiving any loan but it is still only sufficient to handle the collapse of a small national bank. It should, however, be noted, that following this crisis, the DGS will be completely empty and not be able to withstand any further immediate crisis.

If the immediate bank failure is largen than the DGS can cope with by bearing all the costs temselves, the cost of the bank failure must be borne by someone else. Banks could respond to such a failure by taking their CAD ratio down to the minimum of 8%. Our estimates indicate that the average remaining banking system could cope with a banking collapse of 7-19% depending on the CAD ratio of the banks before the collapse and recovery of the failed banks' estates. The combined ability of the banks and the DGS could thus amount to 7-20.6%.

The Impact Assessment report analyses how the ability of the DGS to cope with banking crisis can be improved by increasing the size of the funds available. One such scenario examines the effect of Big bank failure, which corresponds to a collapse of a bank holding 7.25% of eligible deposits. It is clear that even if all 27 Member States get 10 years to prepare for an intervention due to such a banking crisis, only two Member States would be able to handle the cost of the crisi within the time limit by requesting ordinary contributions and only four Member States if the banks are required to pay extraordinary contributions over the same period. The report also analyses the ability of the DGS to handle a big DGS payout corresponding to 1.96% of eligible depostis over a period of 10 years. Here it finds that seven Member States would be able to handle the intervention with cumultaed funds plus ordinary contributions, while additional seven Member States could cope with cumulated funds and extraordinary contributions. Building up such large funds would, however, reduce the banks' operating profits, which could have a serious effect on the banks' market valuation.

In this context it is important to point out that big banks in Europe are usually larger than the Impact Assessment report scenario sets out. Thus, in 2007 an average top five bank in Europe was larger than the scenario assumes in 24 out of the 27 Member States. For these countries the Big bank failure is obviously not the worst case scenario. Statistics indicate that in many cases the average top 5 bank holds 15-17% of eligible deposits. No DGS could handle the failure of such a large bank. By comparison, 92% of the banking system in Iceland collapsed in October 2008.

A Big bank failure (7.25% of eligible deposits) would on average have corresponded to 5% of GDP in the EU, while a system failure (92%) would on average have amounted to 69% of GDP.

The Impact Assessment report makes no attempt to offer any other solution to the issue of systemic crisis, but simply states that this "report does not, however, deal with systemic risk since criteria for measuring it are only being developed on international level". However,

several authors have examined the importance and risk of systemic crisis in the banking system in the last decades.

The Icelandic DGS had a coverage ratio just below the average of the EU countries of 0.5%. Iceland also performs relatively well in the case of a systemic crisis that would force the DGS in each country to pay out funds corresponding to all covered deposits. Thus, Iceland's DGS shortfall as a percentage of GDP is just above EU average and far from being the largest within the EU. Further, if the DGS shortfall is added to the general government debt, Iceland would be just above the average and well below the largest total debt/shortfall ratio in the EU. Similarly, the DGS shortfall as a share of total general government revenues is similar in Iceland to the average of the Member States. Finally, the per capita shortfall in Iceland is only 25% of the highest level in the EU. These results indicate that in the case of a systemic crisis, the situation in Iceland would in no way differ from the situation in many EU-countries, and that some Member States would be much poorly equipped to deal with such a calamity.

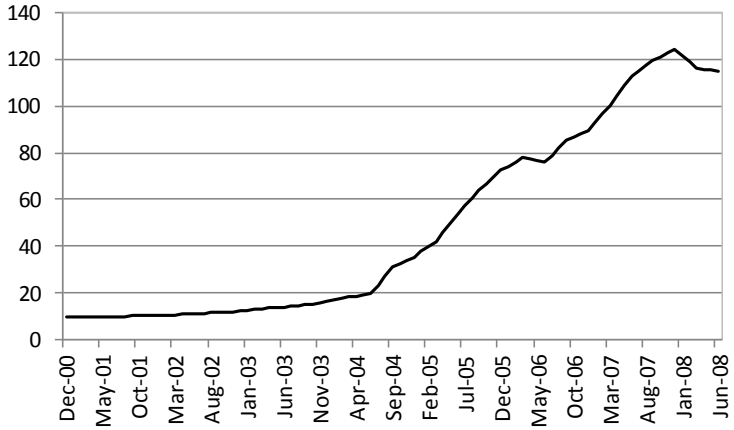
Table of Contents

1 The Icesave obligations in macroeconomic perspective

1.1 The growth of the Icelandic banks

During the period 2001-2007, Iceland's three largest banks – Kaupþing, Landsbanki and Glitnir – experienced a very fast growth. Total assets increased from €9.4 billion at the end of 2000 to €124.5 billion at the end of 2007.[3] During 2008, the value of assets on the banks' books though decreased slightly and amounted to €115.2 billion at the end of the second quarter.

Figure 1 Development of the assets of Iceland's three largest banks. € billion.



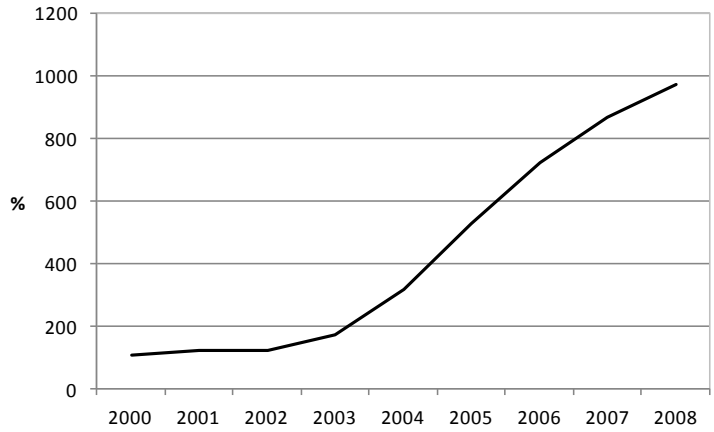
Source: Report of the Special Investigation Commission, Chapter 8.

To put this growth into perspective it is useful to compare the size of the banks to the gross domestic production (GDP) of Iceland. In 2000, the assets of the three banks corresponded to 109% of GDP, but by 2003 that ratio had reached 125%.[4] Five years later, in mid-2008, that ratio has risen to 975%.

[3] Report of the Special Investigation Commission, Chapter 8.

[4] Report of the Special Investigation Commission, Chapter 8and Statistics Iceland (http://www.statice.is/Statistics/National-accounts-and-public-fin/National-accounts-overview).

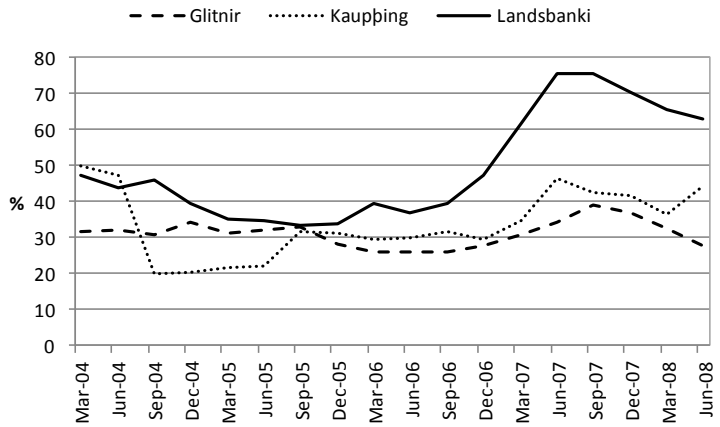
Figure 2 Assets of Iceland's 3 largest banks as a percentage of GDP.



Source: Report of the Special Investigation Commission, Chapter 8 and Statistics Iceland.[5]

In the first years of the 21st century, the Icelandic banks financed their expansion mostly through foreign loans and bond issues. As the interbank loan market became more difficult and in order to reduce risk, the Icelandic banks put more emphasis on diversifying their funding. As shown in Figure 3, the deposit-to-loan ratio shrunk from about 50% for both Kaupþing and Landsbanki in 2004 to around 30% in the latter half of 2005, while that ratio had remained mostly unchanged in the case of Glitnir.

Figure 3 Deposit to loan ratio of Iceland's three largest banks



Source: Report of the Special Investigation Commission, Chapter 18.

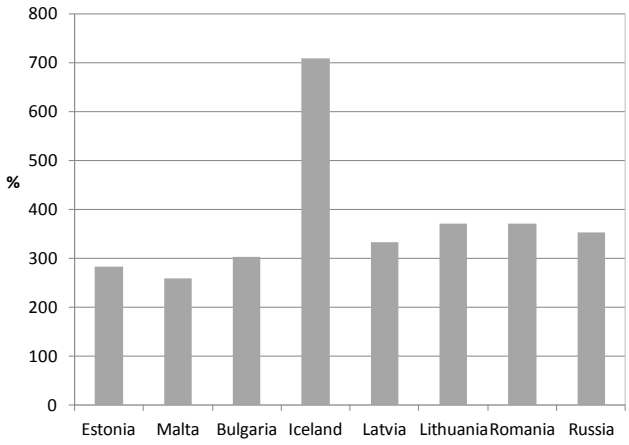
[5] Query made at http://www.statice.is/Statistics/National-accounts-and-public-fin/National-accounts-overview.

The banks, above all Landsbanki, made considerable efforts to strengthen their deposit base. The deposit-to-loan ratio consequently increased, reaching 75% for Landsbanki in mid 2007. This increase was mostly due to foreign operations, in particular Landsbanki's collection of Icesave deposits in the UK and Netherlands. Starting Q3 2007, the ratio then declined steadily until the banks'collapse in October 2008.

1.2 The growth compared to EU countries

Even though this growth of the Icelandic banking system was fast, it was not exceptional as many other countries experienced similar growth. Thus according to data from the European Banking Federation, the banking system of Bulgaia, Latvia, Lithuania, Rumania and Russia all grew by 300-400% in 2002-2007, while Malta and Estonia experienced growth of 258% and 282% respectively. The Icelandic banking system grew by 709% over the same period.

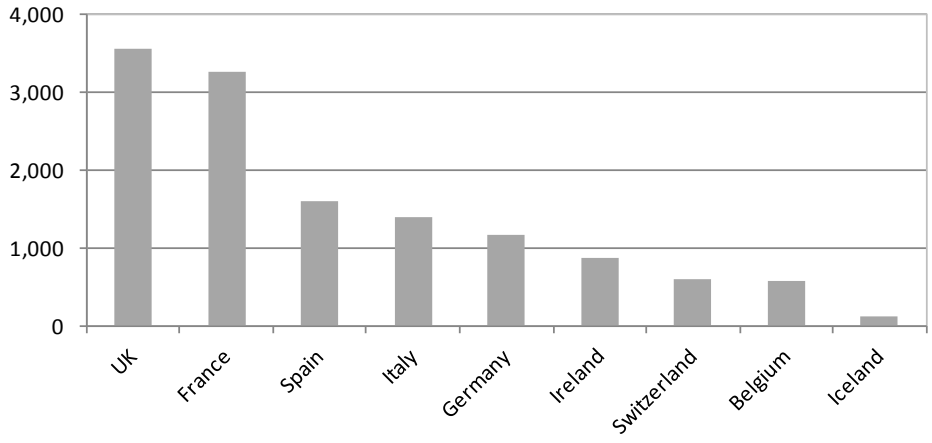
Figure 4 Growth of banking system's assets in selected European countries in 2002-2007.



Source: European Banking Federation.

It is important to realize that the Icelandic banking system was very small on an international scale at the beginning of the period. The rapid growth of the banks in 2002-2007 can thus partly be attributed to a catching-up effect. It is also worth noting that the growth in absolute terms was much smaller than in percentages. Thus, between 2002 and 2007, whereas total assets of the banking system in the EU-27 countries increased by €14,900b, the assets of the Icelandic banks only grew by €111b, or 0.75% of the total EU-27 growth. As shown in Figure 5, the banking system in the UK grew by €3,600b in 2002-2007, with the French banks only registering a slightly lower increase.

Figure 5 The nominal growth of the banking systems in various countries compared to that in Iceland between end of 2001 until end of 2008. € billion

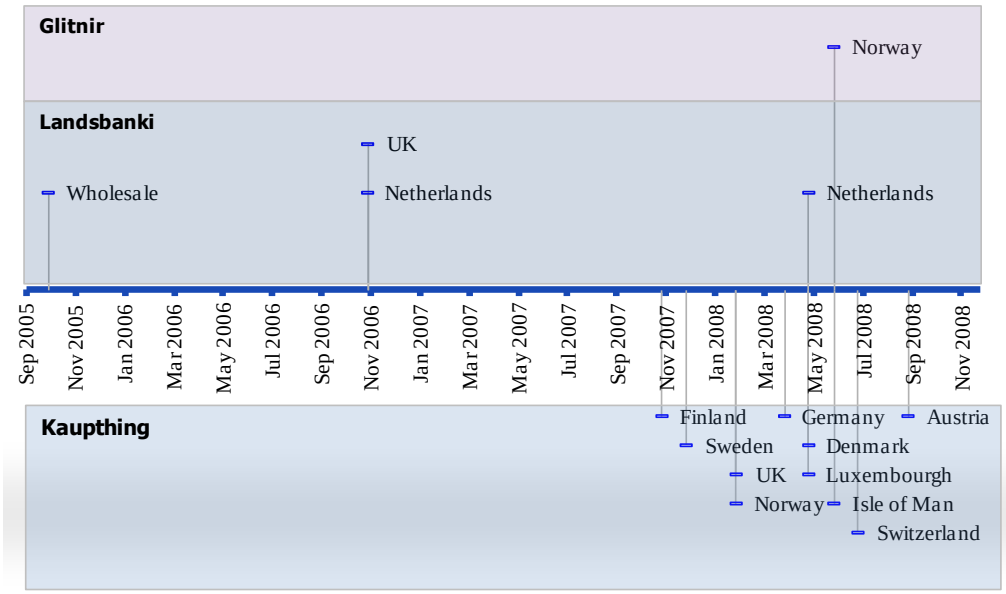


Source: European Banking Federation.

1.3 Development of Icelandic banking in foreign branches

At first the Icelandic banks put the emphasis of their overseas operations mainly on wholesale deposits, which were intended for investors, legal entities, public institutions and offices and non-governmental organisations (NGOs). In October 2006 Landsbanki became the first Icelandic bank to introduce private (retail) savings accounts which were marketed under the name Icesave in the UK. The other banks followed suit, Kaupþing in 2007 and Glitnir in 2008. Kaupþing introduced the Edge savings accounts in Finland in November 2007, and later in Sweden (December 2007), Norway (February 2008), Germany (April 2008) and Austria (September 2008). In all these countries the bank operated through its local branch network. However, the Edge accounts were set up in local subsidiaries in the UK (February 2008), Denmark and Luxemburg (May 2008), Isle of Man (June 2008) and Switzerland (July 2008). By contrast, Landsbanki operated the Icesave accounts in the UK and Netherlands through the banks local branches. In June 2008, Glitnir launched the bank's Save & Save savings accounts in Norway, but these accounts had at time of the crisis in the autumn of 2008, only been marketed there and in Iceland.

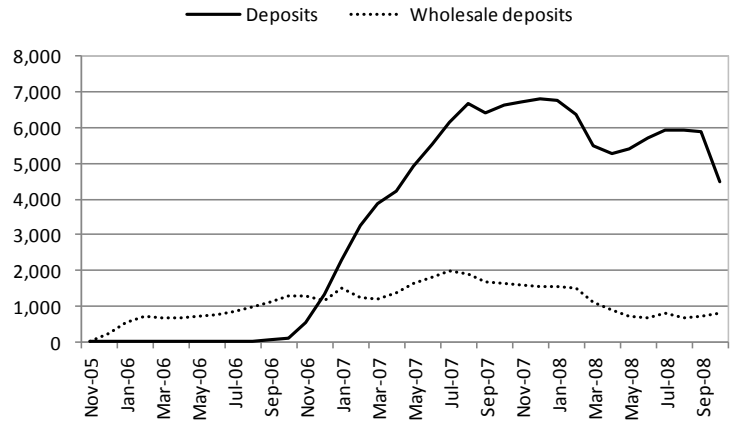
Figure 6 The establishment of subsidiaries and branches of the Icelandic banks abroad.



Source: Glitnir, Landsbanki and Kaupthing.

Landsbanki started accepting wholesale deposits in late 2005, and by the time the Icesave private savings account were introduced, the wholesale deposits had risen to €1.4 billion. A year after the accounts were introduced, deposits at the UK branches totalled €6.6 billion, and had reached €6.8 billion in early 2008. On October 1st 2008, Icesave deposits amounted to €5.3 billion, whereof private savings accounts totalled €4.5 billion and wholesale deposits €0.8 billion.

Figure 7 Development of Icesave deposits in the United Kingdom. € million.

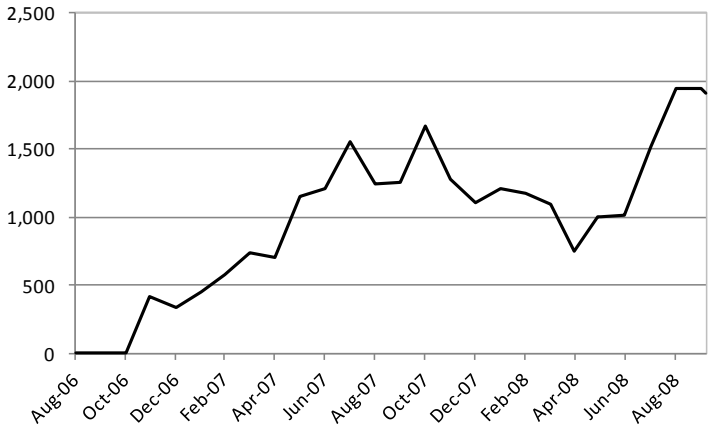


Source: Report of the Special Investigation Commission, Chapter 21.

Landsbanki opened a branch in the Netherlands in 2006, and started accepting deposits from legal entities there later that year. As shown in Figure 8, deposits grew fast in 2006 and 2007

and had reached €1.5 billion in July 2007 before subsiding again to €744 million in April 2008. However, after the introduction of the Icesave private savings account in May 2008, deposits began to rise again and increased by €1 billion, or 50%, in only two months, from June to August.

Figure 8 Development of Icesave deposits in the Netherlands. € million.



Source: Report of the Special Investigation Commission, Chapter 21.

Total deposits in all foreign branches amounted to ISK 1,332 billion when the Icelandic banks collapsed in October 2008. The lion share of these funds, or ISK 1,169.4 billion, had been deposited in Icesave accounts offered by Landsbanki in the UK and Netherlands.

Following the collapse of Landsbanki in October 2008, the UK and Dutch governments put forward claims on the Icelandic Depositors' and Investors Guarantee Fund corresponding to the minimum insured amount according to Icelandic law (€20,887). In the case of the UK, the claims amounted to £2,352 million (ISK 455 billion), and €1,348 million (ISK 205 billion) in the case of the Netherlands. The British and Dutch claims combined thus amounted to ISK 660 billion.[6]

1.4 Development of key macro economic variables

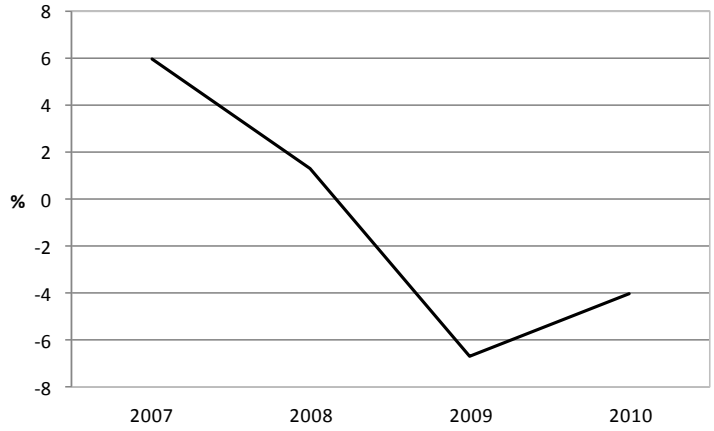
In this section we briefly discuss the development of key macroeconomic variables during the period 2007-2010, two years before and two years after the crisis. We will then relate the size of the British and Dutch Icesave claims to the level of these variables in 2008.

GDP

[6] Using the average exchange rate in October 2008; £=ISK 193.5, €=152.3. The Icesave claims were later fixed at the exchange rate of 22th April 2009; £=ISK 191.08, €=169.23.3. Using those exchange rates, the claims amount to ISK 678 billion. The comparisons in Section 1.4 are based on the October 2008 exchange rates.

In 2007, the last year of the Icelandic pre-crisis boom, gross domestic production (GDP) grew by 6%. The following year economic growth amounted to only 1.3%, but the economy contracted considerably following the crisis. The drop in production measured 6.8% in 2009 and a further 4% in 2010.

Figure 9 Economic growth in Iceland 2007-2010.
Percentage changes in GDP from the previous year.



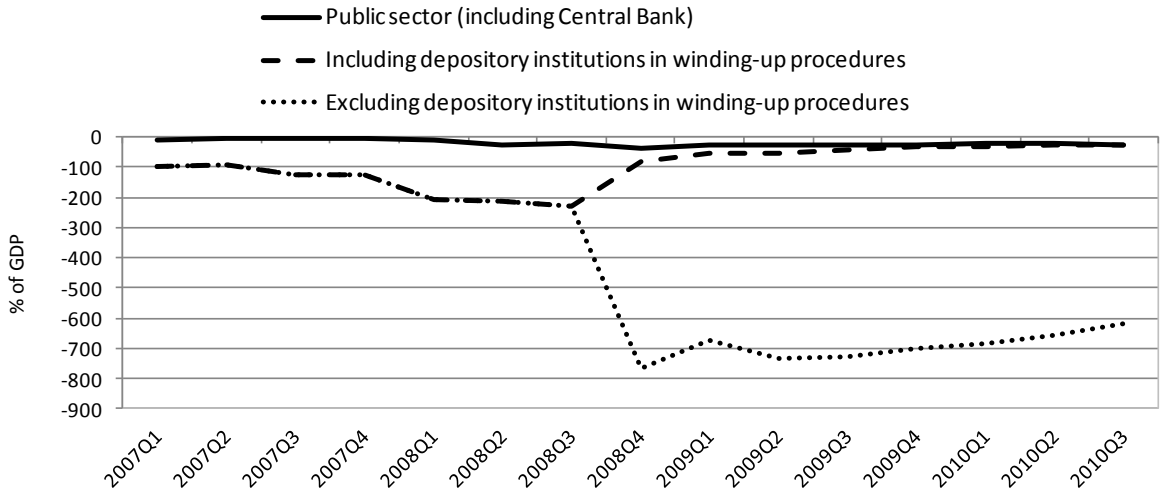
Source: Statistics Iceland.

In 2008, Iceland's GDP measured ISK 1,482 billion. The British and Dutch Icesave claims thus corresponded to 44% of GDP in that year.

Net foreign debt

At the end of the year 2007, Iceland's net foreign debt amounted to 125% of GDP. Most of the debt was private and mostly due to depository institutions. Iceland's external position deteriorated sharply following the crisis and by the end of 2008, the country net foreign debt – including depository institutions in winding-up procedures – measured 767% of GDP. Excluding depository institutions the debt represented 80% of GDP. The negative position of the public sector, including the Central Bank of Iceland, then amounted to 36% of GDP, whereas at the end of 2007, the external debt of the public sector had only amounted to 7% of GDP.

Figure 10 Iceland's external position 2007-2010. Percentage of GDP.

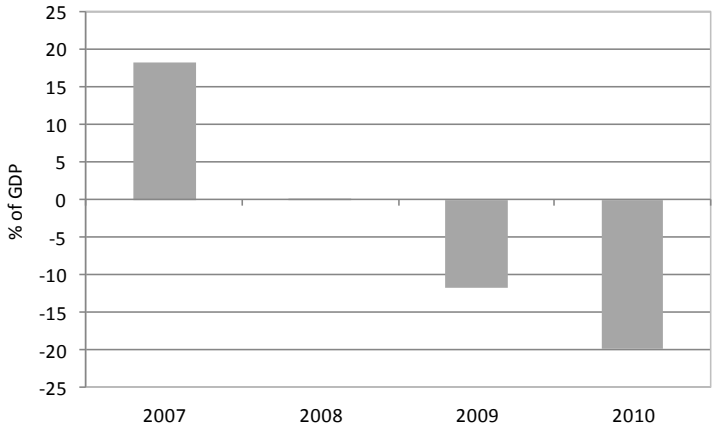


Source: Sighvatsson et. al (2011).

Public debt

During the boom year preceding the crisis the financial situation of the Icelandic government improved substantially. In 2007, the net position, i.e. assets minus claims (excluding pension obligations) was positive and amounted to 18.4% of GDP, but deteriorated after the crisis and was 0.1 in 2008, -11.8% in 2009 and -19.8% in 2010.[7] These figures do neither take into account the Icesave-claims of the British and Dutch nor loans from the IMF and the Nordic Countries to the Central Bank of Iceland.

Figure 11 Central government net position (assets minus claims) 2007-2010. Percentage of GDP.



[7] Including pension obligations, the net debt in 2007 amounted to 0.7of GDP, -23% in 2008, -34.5% in 2009 and -42.2% in 2010.

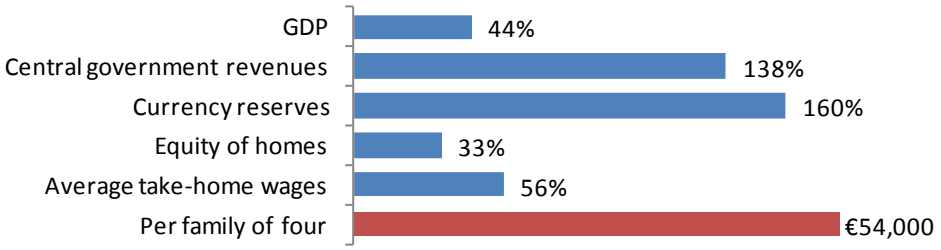
Source: Statistics Iceland.

1.5 Icesave in comparison

In 2008, Iceland's GDP measured ISK 1,482 billion. Central government revenue in that year totalled ISK 477 billion and currency reserves held by the Icelandic Central Bank were estimated at ISK 410 billion.[8] In **Error! Reference source not found.** the size of the Icesave claims made by the British and the Dutch are shown in relation to these macroeconomic variables. Thus the claims corresponded to 44% of GDP in 2008, 138% of government revenue in that year and 160% of the currency reserved held by the Central Bank at the end of October 2008. In the fourth quarter of 2008, Iceland's net foreign debt – excluding depository institutions in winding-up procedures - amounted to 80% of GDP, whereof net public sector debt corresponded to 36% of GDP. The Icesave claims therefore implied more than doubling of foreign public sector debt.

On January 1st 2008, the number of people registered in Iceland was 315.459. A year later, the population had grown to 319.368 persons. Thus, on average the nation numbered 317.414 individuals in 2008. The British and Dutch Icesave claims therefore amounted to €13,600 per capita or to €54,400 per family of four. Further, the claims amounted to 33% of the equity of Icelandic homes in 2008, and 56% of average take-home wages in that year.[9]

Figure 12 Size of Icesave claims relative to various economic indicators



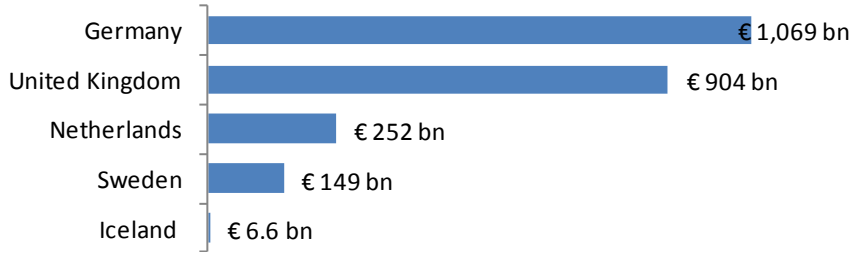
Source: Statistics Iceland and Central Bank of Iceland.

As discussed above, the Icesave claims equal 44% of Iceland's GDP in 2008. If these claims are calculated in reference to other countries' GDP in 2007 it may be shown that such a relative burden would have amounted to €900b for the UK and €250b for the Netherlands.

[8] The currency reserves were mostly financed by foreign loans.

[9] According to OECD (2009), average annual take-home wages of single individuals without children was ISK 3.1 million in 2008, while take-home wages of married couples with 2 children amounted to ISK 4.7 million. As the Icesave claims represent ISK 2.1 million per capita, this corresponds to 44.0% and 66.8% of the average take-home wages of singles and married/cohabiting individuals respectively.

Figure 13 Size of Icesave claims relative to GDP of selected countries (2007). € billion



Source: Eurostat.[10]

[10] Query made at http://epp.eurostat.ec.europa.eu/portal/page/portal/national_accounts/introductionOECD.

2 The EU DGS system and its ability to cope with crisis

2.1 Introduction

Following the financial crisis of 2007 and 2008, the European Commission decided to comprehensively review Directive 94/19/EC on deposit guarantee schemes ("The Directive")[11]. As a part of this revision, the Commission published in 2010 an Impact Assessment report ("Impact Assessment report" or "IA report") which was based on an earlier Joint Research Centre report ("JRC report").

The JRC report performed quantitative studies aimed at investigating the following issues:

1) The harmonisation of the funding mechanisms of DGS.
2) The appropriateness and financial viability for Member States of an increase in the level of coverage and a potential harmonisation of the level of coverage across DGS.
3) The impact of discontinuing set-off practices
4) The impact of discontinuing topping-up practices
5) The possibility of reducing payout procedures in case of failure.
6) The feasibility of Pan-EU/Community DGS
7) The analysis of administrative costs that DGS may incur when implementing the Directive 94/19/EC as amended by Directive 2009/14/EC

The Impact Assessment report aims at

1) providing for an evidence-based analysis of the existing and potential problems stemming from the current guarantee system,
2) spelling out the possible policy options designed to address the problems in line with the objectives set,
3) showing the possible impacts of the policy options,
4) testing these options against the effectiveness, efficiency and consistency criteria.

These two EU commission reports will be the basis for scenarios and calculations in this report.

In this section we focus on the funding of DGS and the ability of the schemes to cope with bank failures for different scenarios, from the ability of the DGS to cope with the failure alone and its ability if banks help. We will use scenarios from the IA and JRC reports but also our own calculations as the two reports only investigate policy changes over a long period of time rather than the capacity of the DGS to cope with an immediate crisis as happened in Iceland.

In the next section we will use information on the status of the EU DGS systems from the JRC report for comparison with the Icelandic DGS fund. Since the report uses numbers from 2007, we will use information for Iceland from the same year for comparison.

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[11] OJ L 135, 31.5.1994.

2.2 The need for a DGS system

The risk of bank run is inherent in the current banking structure or as the Impact Assessment report notes (p.5): “no bank, whether sound or ailing, holds enough liquid funds to redeem all or a significant share of its deposits on the spot. This is why banks are susceptible to the risk of bank runs if depositors believe that their deposits are not safe and try to withdraw them all at the same time. This can seriously affect the whole economy.”

In order to address this risk of bank runs, the system of DGS has been set up throughout the world to increase the confidence of depositors in the banking system.

2.3 Directive 94/19/EC

In Europe the EU the Directive 94/19/EC on Deposit Guarantee Schemes entered into force in 1994 to address the bank run dilemma. The Directive has the aim of maintaining financial stability by strengthening depositor confidence and protecting their wealth. This is done by establishing DGS which reimburse deposits up to a certain ceiling, the coverage level, if a bank failure occurs.

The Impact Assessment report explains the objectives of The Directive (p. 27) in more detail as “maintaining financial stability by strengthening depositor confidence and protecting their wealth. The pursuit of these objectives is driven by the need to enhance the Internal Market, which lies at the heart of the Directive. The following general objectives result from the recitals of the Directive and the Treaty:

- protecting a portion of depositor wealth in order to avoid bank runs, personal hardship and stress for social welfare systems;
- ensuring financial stability by strengthening depositor confidence and a more effective supervision and resolution of cross-border banks;
- enhancing the Internal Market:
    - ensuring a level playing field between banks wherever headquartered in the EU;
    - allowing banks to choose the way of providing cross-border services (i.e. via direct operations in another Member State, branch or subsidiary) without restraints concerning the DGS regime.”

In practical terms this means (IA report p. 5) that the Directive “has ensured that all EU Member States have in place a safety net for depositors if banks fail to pay”. If a bank has to be closed, “its DGS steps in and reimburses depositors up to a certain ceiling (i.e. the coverage level), thereby financing depositors' needs. The existence of DGS also means that most depositors (those who are fully covered) do not have to participate in lengthy insolvency procedures which usually lead to insolvency dividends representing only a fraction of the original claims.”

2.4 Statistics about banks and deposits

2.4.1 Size of the banking system

The size of the European banking system is enormous by any measure. In 2007 the total assets of banks in the 27 European Union Member States amounted to €40.4 trillion[12] compared to the total GDP of €12.4 trillion[13]. The banking sector thus amounted to 325% of the combined GDP of the Member States.

A large source of financing for the EU banks is through deposits which can be categorizes into the following three groups in regards to the DGS system[14]:

- **Total deposits**
  Any deposit as defined in Article 1(1) of Directive 94/19/EC, excluding those deposits left out form any repayment by virtue of Article 2.

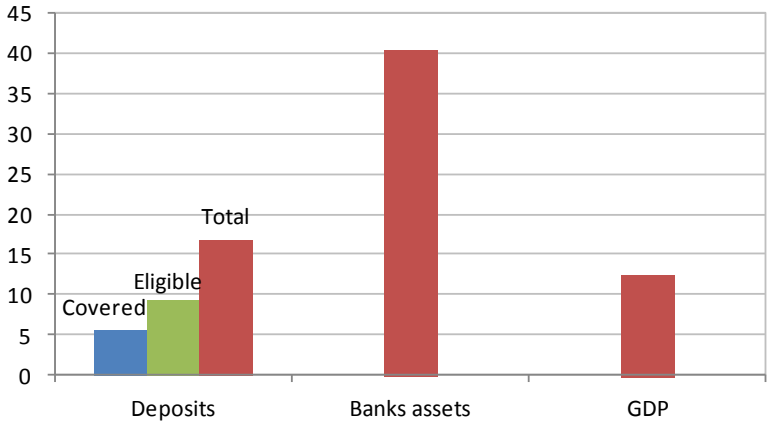
- **Eligible deposits**
  Deposits repayable by the guarantee scheme under your national law, before the level of coverage is applied.

- **Covered deposits**
  Deposits obtained from eligible deposits when applying the level of coverage provided for in every national legislation.

According to the IA report (Annex, p. 103) the total deposits in the EU amounted to €16.8 trillion as of 31 December 2007. This is roughly 40% of the banks' balance sheets. Eligible deposits totalled €9.3 trillion and covered deposits €5.7 trillion. Eligible deposits thus were 55% of total deposits and 75% of combined GDP in 2007.

[12] Source: European Banking Federation
[13] Source: European Banking Federation
[14] Source: The IA report, Annex p. 97

Figure 14 Size of the banking system, amount of deposits and GDP for EU27 countries. € trillion.



Source: IA study and European Banking Federation.

2.5 Scenario 1: The ability of DGS to cope with crisis by using its own funds

This scenario analyses the ability of DGS to cope with a banking failure if it uses its own resources (liquid assets and guarantees held by ex-ante funds) to compensate depositors.

2.5.1 Ex-ante and ex-post funds

According to the 94/19/EC "the cost of financing [deposit guarantee] schemes must be borne, in principle, by credit institutions themselves". Thus DGS are principally funded by banks paying contributions to them.

How these contributions are made, however, differs between various DGS systems. Basically there are two types of funding mechanisms for DGS, ex-ante and ex-post. In ex-ante DGS, the banks pay contributions on a regular basis to build up a fund available to depositors in case of a collapse. In ex-post funds the banks only contribute after a failure. This means that the relevant DGS are empty and hold no assets and implicitly assumes that the banks that remain after the crisis will pay the cost if a bank failure occurs rather than contribute to the fund beforehand.

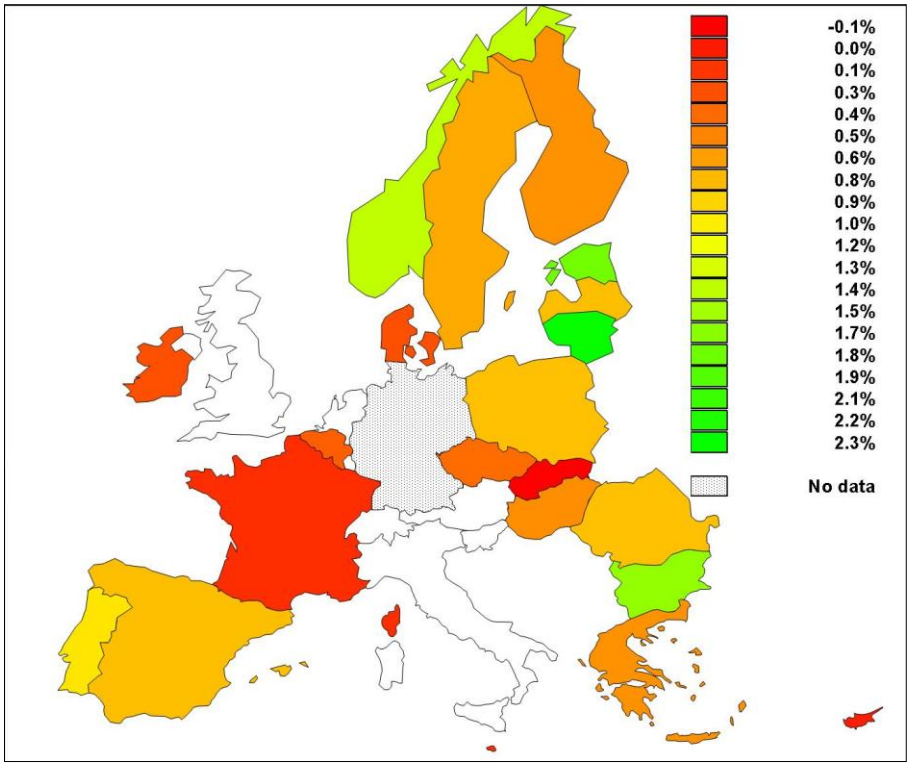
In 2007, 21 Member States had ex-ante DGS funds but six Member States (AT, IT, LU, NL, SI and UK) had ex-post DGS[15].

[15] Source: JRC report, p. 29

2.5.2 The coverage ratio

The coverage ratio is defined as the ratio between the size of ex-ante accumulated funds and eligible deposits. As shown in Figure 19, the ratio varied between 0.01% and 2.32% in Member States in 2007

Figure 15 Coverage ratios of ex-ante funds in the EU and Norway in 2007.



Source: Source: IA report, Annex 16, p. 131.

In 2007, the simple average EU coverage ratio was then around 0.73%.[16] The simple average number is, however, skewed for two reasons.

First it neglects the various sizes of DGSs within member states. Thus three DGSs from smaller Member States (LT, EE, BG) have considerably higher coverage ratio (1.62%-2.32%) than the other Member States while only 1.2% of the deposits resided in these countries. They thus increase the simple average while having little significance regarding DGS ability in an EU wide context.

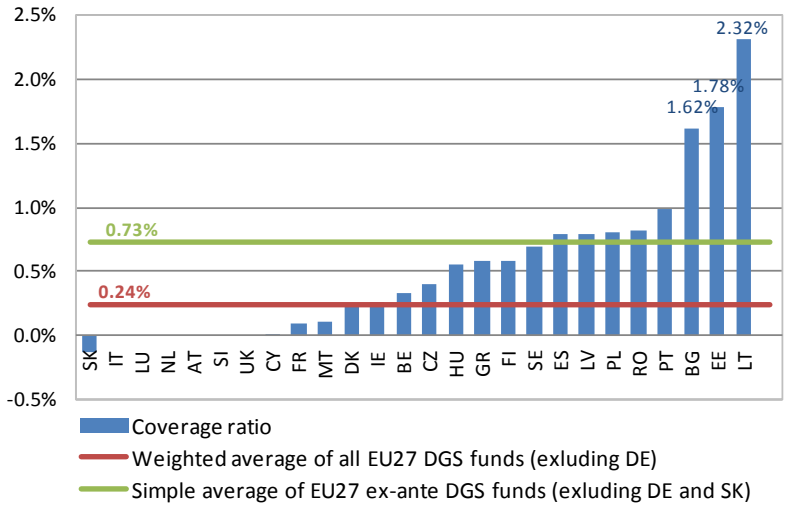
Second, the simple average does not include the empty ex-post DGS funds. They are after all empty but have promised to insure depositors. In case of a banking failure the ex-post DGS have the same effect as an empty ex-ante fund. They increase the outstanding exposure of the

[16] Obtained by excluding Slovakia's negative coverage ratio and the nil coverage ratios of ex-post financed DGS. The German DGS is also excluded as no information is available on the size of that fund.

EU DGS system. In total the EU DGS only hold €16.8 billion of funds to cover the €9.3 trillion of eligible deposits.

These pitfalls can, however, be avoided by using a weighted average measure, according to which the average coverage ratio was 0.24% in 2007. The weighted average of 0.24% [17] gives a better perspective on the ability of the total DGS system to cope with a banking crisis, as it shows the true level of funds immediately available in times of crisis.

Figure 16 Coverage ratio of all (ex-ante and ex-post) EU DGSs in 2007.



Source: JRC report.

These numbers are fairly easy to interpret. If a failed bank has more than 2.3% of the eligible deposits, no DGS is able to reimburse the deposits by itself and while the average DGS can only withstand a bank failure amounting to 0.73% of the covered deposits, the average ability on an EU wide scale is even lower or only 0.24%.

The numbers clearly show that DGS in the European Union are almost empty and can only cope with a minor banking failure with the resources immediately available. The Impact Assessment report delicately concludes that "ex-ante funds alone may not be sufficient to pay out depositors".[18]

2.5.3 Extraordinary bank contributions

One option for DGS to cope with a banking collapse is to request contributions of banks above the normal contributions. These contributions are called extraordinary contributions.

[17] Obtained by excluding Germany which did not give any information about its DGSs' size.
[18] IA report, p. 20-21.

The Impact Assessment report notes (p. 20-21) that where "ex-ante funds are collected, the ratio between extraordinary (including ex-post) funds and total funds is between 1.4% in SE and 82% in CY. […] If needed, all ex-ante funded DGS can request supplementary contributions from banks but the extent is very different. […] Taking into account additional ex-post financing facilities for ex-ante financed schemes, the coverage ratio ranges between 0.1% and 3.1%"

Collecting extraordinary contributions thus only changes the ability of the funds marginally or as the report concludes (p. 22): "In most Member States, the funds of DGS may either be not sufficiently financed to even fulfil their 'paybox'[19] role or lack the power to participate in early interventions aiming at preventing a failure."

2.6 Scenario 2: Strengthening of DGS funds over a period of time

One option to increase the ability of the DGS to cope with banking collapse is to simply increase the size of the funds available. The Impact Assessment report looks at several scenarios in that respect. In this report we will focus our attention on one of scenarios which describes the potential impact on banks' operating profits if the idea was to build up, over a 10 year period, a DGS system which would be able to withstand a "Big bank failure".

2.6.1 Big bank failure

The Big bank failure refers to a collapse of banks holding 7.25% of eligible deposits. According to the JRC report this is a „failure of a member of big size. According to the dataset on top-10 DGS members, the simple average size of one of these banks is around 7.25% of the amount of eligible deposits of a DGS".

2.6.2 Normal times and crisis situation

The JRC report then calculates the strain of the scenario on the banking system under two economic situations, "normal times" and "crisis situation". The JRC report gives the following definitions of the two scenarios (p. 56) "In normal times the target fund is hypothesised to be split into an ordinary component and an extraordinary one. It is assumed that the level of the ordinary component is 75% in the normal times, thus the corresponding extraordinary component will be 25%. […] In contrast, in a crisis situation the target fund is assumed to be entirely collected (thus the ordinary component becomes 100 % of the target fund)". [20]

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[19] The paybox role is used to describe the DGS's role to pay out depositors of failed banks.

[20] A footnote on page 55 in the IA report notes that in "principle, the DGS funds should consist of both ex-ante and ex-post elements. Keeping in mind the drawbacks of pure ex-post funding (pro-cyclicality, competitive disadvantages, disincentives for sound risk management, etc), the ex-ante element should be clearly dominant. It means that it should be significantly (and not merely slightly) higher than 50% of the total funds. At the same time, taking into account the importance of additional funding that may be needed in a crisis situation, a pure (100%) ex-ante system is not desirable. Therefore, the balanced proportions between ex-ante and ex-post

2.6.3 Ability of DGS funds

The impact of adopting target level that would allow DGS to cope with bank failures corresponding to those shown in **Error! Reference source not found.**, are measured by comparing incurred costs with both ex-ante and **ex-post funds**.

The main findings of the IA report (p. 53-55) are: "Considering the target level allowing DGS to cope with the biggest failure (i.e. 7.25% of eligible deposits to be achieved in 10 years), two Member States would be able to handle this failure with the funds at their disposal (ex-ante). Considering both ex-ante funds and additional contributions, and assuming to collect all contributions in 10 years, 4 Member States would be able to handle such a failure."

The IA report summarises the result in a table in Annex 15, p. 129:

Table 1 Number of member states able to handle he costs under various scenarios on a target level for DGS.

Scenario (target level - to be achieved after x years)	**Number of MS able to handle the intervention with cumulated funds plus ordinary contributions within the time limit**	**Number of MS able to handle the intervention with cumulated funds plus extraordinary contributions within the time limit**
	Normal times *	Crisis situation *
Big bank failure (7.25% of eligible deposits - 10 years)	2 BG, LT	4 BG, GR, RO, SK
Big DGS payout (1.96% of eligible deposits - 10 years)	7 BG, EE, GR, LV, LT, RO, SK	14 BG, CZ, DK, EE, GR, ES, CY, LV, LT, HU, MT, PT, RO, SK

* Normal times: only ex-ante contributions are collected; Crisis situation: both ex-ante and ex-post contributions are collected (up to max limits).

Source: IA report.

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elements could be roughly 75%-25% or 80%-20%. In both cases, the ex-post element would be close to the actual 'extraordinary ratio' in the EU . Since the latter proportion would be slightly more costly for the banking industry in normal times, the former seems to be more preferred."

A footnote on page 55 in the IA report notes that the "'extraordinary ratio' in the EU (simple average) is 32.9% for all Member States or 21.1% if MT and CY are excluded (as their indicators - 72% and 83% respectively - are much higher than the indicators of other Member States). As to the EU weighted average (according to the amount of eligible deposits), it is 21.2% when including CY and MT and 19.0% if they are excluded – see Annex 13a).

Even if the target level is set so that the DGS can cope with a medium-sized failure in a crisis (which is defined as to the scenario where 1.96% of eligible deposits are to be achieved in 10 years) only (p. 54) "seven Member States would be able to handle this failure with their ex-ante funds, and 14 Member States would be able to handle this failure when considering additional funds."

It is clear that even if all 27 Member States get 10 years to prepare for an intervention due to a banking crisis amounting to 7.25% of the banking system, only two Member States would be able to handle the cost of it within the time limit by requesting ordinary contributions and only four Member States the banks are required to pay extraordinary contributions over the same period.

2.6.4 Effect on banks

Building up a fund amounting to 7.25% of eligible deposits is not without cost. As the money accumulated in the funds is paid by the banks and then is no longer available to them, the increased contributions decrease the banks' operating profit.

The JRC report evaluates (p. 75) "the impact of changing DGS contributions on banks taken from a sample covering EU MS for each scenario presented in the previous subsection. We propose to measure the impact by estimating the variation in banks' contributions and then comparing this variation with an accounting measure covering the bank's normal/core business operations (i.e. excluding extraordinary/exceptional amounts or other items such as taxes that are not directly related to the banks' core business), i.e. the operating profits.[21] In particular we will hypothesise that the variation in contribution will impact on the operating profits and we will measure the impact as follows:"

$$\text{Impact on bank} = \frac{\Delta \text{ Operating Profit}}{\text{Old Operating profit}} = \frac{\Delta \text{ Contributions}}{\text{Old Operating Profit}}$$

Where (p. 82)

$$\Delta\text{Contributions} = \frac{\text{Scenario Cost} - \text{Current Fund}}{\text{Time Horizon}} - \text{Current Contributions},$$

Here the JRC report uses 2008 contributions as the base scenario and the time horizon is the number of years to reach the target, in this case ten years.

[21] Operating profit for a Bank includes: Net Interest Revenue + Other operating income — Personnel Expenses — Other Operating Expenses — Loan Loss Provisions.

The JRC report concludes (p. 75) that this "is equivalent to saying that the impact is measured as the percentage of variation of the operating profits of the bank. An increase in contributions will reflect a decrease in the operating profits".

The result for banks is summarised in a table on page 54 in the IA report:

Table 2 Scenarios on the target level: potential impact on annual bank operating profits at EU level

	Big bank failure (fund built up over 10 years)
Impact in normal times (only ex-ante contributions are collected)	-29.20%
Impact in a crisis situation (both ex-ante and ex-post contributions are collected)	-41.76%

Source: JRC report.

The findings of the IA report are thus if all the cost of accumulating sufficient funds to a DGS so that it can cope with a collapse of banks holding 7.25% of eligible deposits is to be borne by the banks themselves (as opposed to their customers), the contributions paid by the banks would, on EU level, decrease their profits by 30-40%.

It is absolutely clear that such a decrease in operating profits for such a long period of time would have serious effect on the banks' market valuation.

2.6.5 Expanding the scenario

Given the small size of the DGS funds, as demonstrated in previous chapters, they become increasingly irrelevant as the collapse gets bigger. Since relationship between the impact on banks and size of collapse (scenario cost) is linear, the formula in the last chapter can be used to show that the operating profit of banks on EU level would be completely wiped out for ten years if the target level of DGS was set to 15-17% of eligible deposits in a crisis situation. Despite this being a rough estimate it demonstrates how unachievable such high coverage levels are.

2.7 Scenario 3: The ability of DGS to cope with immediate crisis

What if we don't have 10 years? What if there is a banking crisis before the sufficient funds have been accumulated in the DGSs? Given the current economic situation this is a scenario that cannot be excluded.

As demonstrated in a previous chapter, the current DGS can cope with a collapse of banks holding between 0.01% and 2.3% of eligible deposits. In order to reimburse depositors the DGS need to have access additional resources. The IA report notes (p. 19) that in addition to

banks' contributions "other DGS financing sources are loans taken by the DGS or direct state interventions."

This is, however, not unified between different DGSs. The IA report points out (p. 20-21) that "access to funding beyond ex-ante funds is different, too. All but 7 DGS can borrow money from different sources, but 3 DGS only to a limited extent."

2.7.1 Further expansion of scenario in JRC report

Despite mentioning the option, neither the IA report nor the JRC report make any attempt to calculate a scenario where the DGS takes a loan to fulfil its 'paybox' role. However, based on the analysis for cost of the banking system to build up a DGS that can withstand a Big bank failure, such a scenario could be roughly estimated from numbers in the reports if interest rates on the loan and recovery from the estate are neglected.

One could foresee that the DGS would first have to recoup the reimbursement it made from the banks and then build up funds again. Given the scenarios above this could mean a crisis situations contribution for ten years to repay the loan and then another ten years of normal times contributions to build up a new fund. If the collapse and the target coverage ratio in 20 years is 7.25% of eligible deposits, this profits of the banks would first reduce by 41.76% for ten years and then another 29.20% for the next ten.

It can be deducted that if a Big bank failure, where 7.25% of eligible deposits have to be reimbursed, were to happen in the near future, banks' profits would be reduced by a 30-40% over a period of 20 year.

2.7.2 DGS pays all costs

The available EU Commission reports don't address what happens if large banking failures occur immediately. They are focusing on the effect of policy changes and generally assume that changes made, e.g. in coverage ratio, can be implemented over a time period of up to 10 years. Following the crisis, the DGS are assumed to collect contributions from the remaining banks to fund reimbursements to depositors.

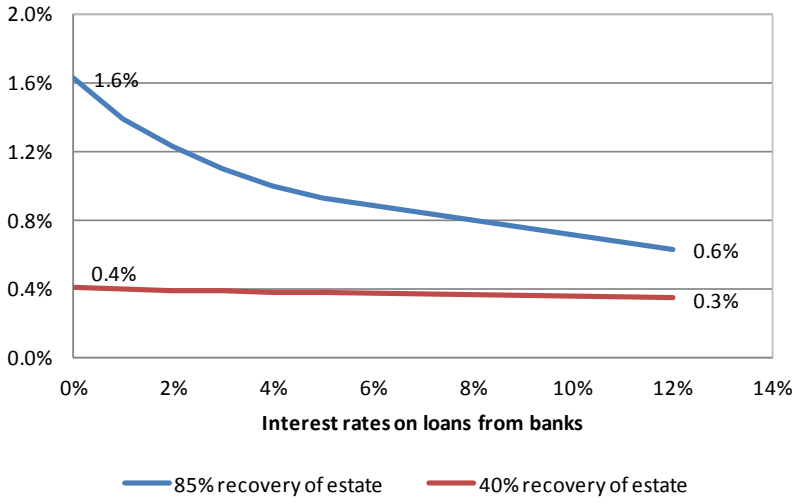
In this scenario, we try to estimate the ability of the relevant DGSs to cope with an instant banking failure by raising loans from banks to reimburse depositors immediately with the premises that the banks will not bear any cost i.e. the DGS will repay the loans in full with interest rates. This type of funding would be required if the DGS don't have sufficient (ex ante) assets to reimburse deposits. The loans raised will amount to the difference between the reimbursed deposits and the assets held by the DGS before the collapse. Here we will look at two scenarios, one with 85% recovery (optimistic scenario) and the other with 40% recovery (prudent scenario).[22] For simplicity we will assume that the bank's estate will recover the

[22] It has to be noted that much lower recovery rates have been seen in the recent past e.g. in the bankruptcy of Lehman Brothers. It is also worth noting that deposits are in most cases not priority claims and without any

assets in 5 equal steps over five years[23]. The intention is to give a rough idea on the coverage ratio the DGS could handle by bearing the cost themselves.

It is further assumed that after reimbursing the deposits, the DGS will (1) hold a claim against the estates of the collapsed banks; and (2) owe the remaining banks the loan amounting to the difference between the covered deposits and the assets held by the DGS before the collapse. The ability (loan + own assets) of the funds to cope with a bank failure by bearing all the cost themselves can be calculated for different interest rates on the loan from the banks and recovery from the estates. The premise is that the estates' recoveries suffice for repayment of the loan, both principal and interest rates.

Figure 17 The ability of the average EU-27 DGS to cope with a banking failure if it receives a loan from banks which will be fully repaid with interest. Assets of failed banks as % of total bank assets.



Source: IA report and calculations of IoES .

Our calculations indicate that an average DGS could cope with the collapse of a bank sized 0.3% to 1.6% of the banking system, depending on the funding cost of the DGS and the recovery ratio of the estates. This is a large increase from the 0.24% banking failure the DGS can cope without receiving any loan (Scenario 1) but it is still only sufficient to handle the collapse of a small national bank. It should, however, be noted, that following this crisis, the DGS will be completely empty and not be able to withstand any further immediate crisis. This also holds true in the other crisis situations analysed in this report.

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security. The recovery ratio is thus after debt setoff and takeover of securitized assets by other creditors. This means that even if the estate recovers 70% of the assets, recovery of the DGS could be e.g. 40%.

[23] The recovery of assets can take much longer and litigations could prevent estate payments for years.

2.8 Scenario 4: The ability of banks to help the DGS in case of immediate crisis

This scenario investigates the situation where the immediate bank failure is larger than the DGS can cope with by bearing all costs themselves i.e. a collapse larger than the 0.3-1.6% according to Scenario 3. Such a scenario means that somebody else will have to bear some cost of the bank failure, in our case the banks.

It is assumed that the DGS will receive a loan so that all eligible deposits can be reimbursed immediately but that the recovery of the failed banks' estates will not be sufficient to repay both the principal and interest.[24] The remaining banks will have to immediately book the expected cost of such an action on their financial statements[25] and we will try to estimate the maximum failure the banking system could deal with without the remaining banks going technically bankrupt, i.e. having a CAD ratio below the regulatory minimum of 8%.[26]

It is assumed that before the banking crisis the typical CAD ratio is between 11-14% and the average equity ratio 4%.[27] Further, the banks are assumed to lend the DGS to reimburse depositors and that the loan is immediately adjusted to its expected value on the banks' balance sheets.[28] Thus the remaining banks will incur costs that decrease their equity and thus their CAD ratio.

However, taking the CAD ratio down to 8% means that the remaining banks have reached their minimum equity and could not withstand any further asset deterioration at all. They could thus not withstand an economic downturn which would result in higher risk sensitivity. This would also lead to a drastic lowering of their market value and possibly the loss of depositors' confidence.

The results show that the average remaining banking system could cope with a banking collapse between 7-19% depending on the CAD ratio of the banks before the collapse and

[24] It does not matter from whom the loan is as the banks will bear the cost. We will ignore the DGS funds as their coverage ratio is only 0.24%

[25] How this is implemented is irrelevant. The DGS could e.g. repay the loan by charging extra fees from the remaining banks over some period of time or the bank could lend the money and immediately write it down to the expected recovery.

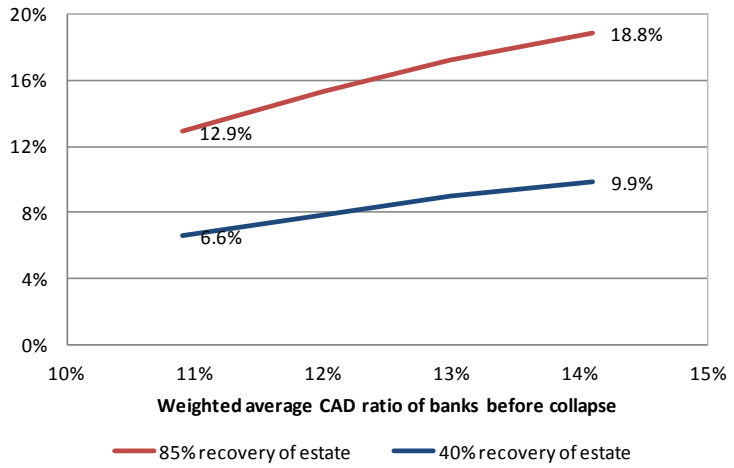
[26] According to the Basel II capital framework the minimum solvency ratio is 8%. This CAD ratio expresses the relationship between bank's own funds (capital) and its risk-weighted asset. The equity ratio of a bank (capital/Total asset) is not the same number as the CAD ratio as it compares the capital against total assets without any risk-weighting.

[27] The equity ratio has been relatively stable at 4% over the last decade. See IMF (2005), p. 178 and IMF (2010) p. 26. This has changed a lot in the last few years and now the European banking systems need additional funds just to maintain a normal equity ratio.

[28] To keep the model simple we will ignore the funds held by the DGS themselves as they will be small compared to the ability of the banks. We continue to assume the recovery of the failed banks' estates being in five equal payments over five years and discount the payments with 5% interest rate to find the current value of the loan.

recovery of the failed banks' estates. This number should then be added to the numbers from Scenario 3 to get the total ability of the system to withstand financial crisis.

Figure 18 The ability of the average EU-27 DGS to cope with a banking failure if cost incurred by banks lowers the CAD ratio to the minimum 8%. Assets of failed banks as % of total bank assets.



Source: IMF,IA report calculations of IoES.

2.9 Weaknesses in the implementation and assessment of DGS

2.9.1 Deposits unstable under directive

Article 7.1 in Directive 94/19/CE states that the "aggregate deposits of each depositor must be covered up to ECU 20 000 in the event of deposits' being unavailable". However, since the crisis in 2008 this coverage level has been raised to €100.000.

The reasoning behind the increase in coverage level is explained in the Impact Assessment report, where it says (p. 10) that "under a coverage level of €50 000[29], only 91% of the number of eligible deposits would be covered[30]. This means that at least 9% of depositors are likely to run on a bank. Given that many depositors perceive themselves wealthier than they are, at a coverage level of € 50 000, there might even be more than 9% running on their bank. Papers of the Basel Committee for Banking Supervision define deposits as 'unstable' if there is a run-off-factor of 7.5% of depositors. A coverage level at €50 000 would therefore be

[29] Directive 2009/14/EC required Member States to increase the coverage level to at least €50 000 by end of June 2009 and obliges them to implement coverage level of €100 000 by the end of 2010

[30] It would not be useful to refer to total deposits since they contain a large part of ineligible deposits (i.e. by financial institutions) and their comparison with covered deposits would consequently not lead to relevant results.

dangerously low." Raising the coverage level to € 100,000 on the other hand, would cover 95.4% of the number of eligible deposits.

Table 3 The amount and the number of covered deposits with relation to the eligible deposits in the EU.

Ratio	As of end-2007	Coverage level			
		€50 000	€100 000	€150 000	€200 000
Amount of covered deposits / Amount of eligible deposits	61.1 %	58.6 %	71.8 %	81.0 %	88.4 %
Number of fully covered deposits / Number of eligible deposits	88.8 %	91.0 %	95.4 %	96.5 %	97.2 %

Source: IA report.

Thus the report reasons that the coverage level of €20.000 present in 2008, when the collapse occurred in Iceland, led to the ratio of depositors likely to run on a bank being so high that the deposits could be considered as 'unstable'.

2.9.2 What about large banks?

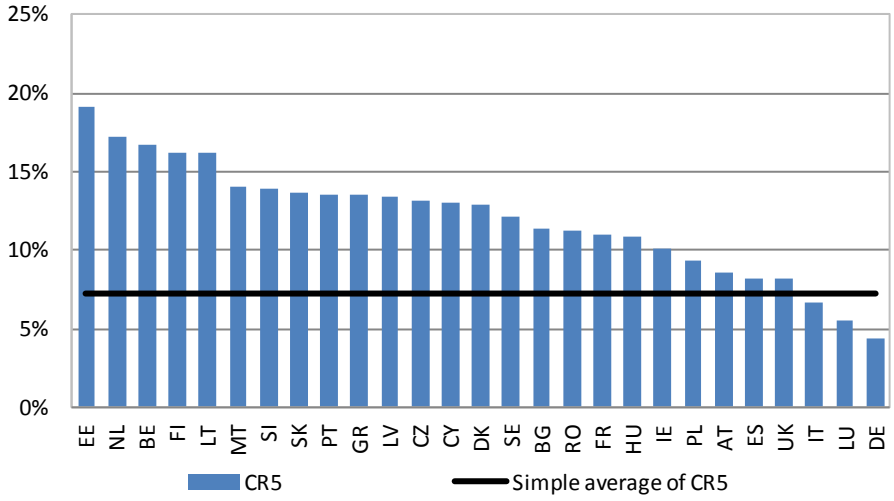
The report talks about 7.25% as a Big bank failure and does not make any attempt to investigate larger failures. But how realistic is this 7.25% scenario as a worst case scenario? The European Central Bank (herenceforth referred to as ECB) publishes annually a report called „EU banking structures". In this report it lists the so called CR5 statistic (p. 49):

> *The CR5 of a Member State is the percentage share of the sum of the assets of all the credit institutions in that particular Member State held by the five largest credit institutions, ranked according to assets.*[31]

[31] The set of the five largest credit institutions may vary over time.The ratio is calculated on the basis of a sub-set of the ECB's list of MFIs used for monetary policy purposes. The sub-set of the MFI list concerns credit institutions only. This list follows a host country residence approach and is on a non-consolidated basis, meaning that bankingsubsidiaries and foreign branches are considered to be separate credit institutions. Domestic branches and subsidiaries resident outside the EU are not captured, while EU-residentbranches and subsidiaries of third-country credit

The ECB report thus shows the average share of total assets held by the five largest credit institutions (top five credit institution) for all EU Member States. Dividing this number by five gives the share of total bank assets in the Member State held by the average top five bank.

Figure 19 The share of total assets held by the average top five credit institutions (CR5) in the EU27 countries in 2007.



Source: ECB (2010).

The numbers clearly show that in 24 out of 27 Member States the average top 5 bank is larger than 7.25%. For these countries the Big bank failure is obviously not the worst case scenario. The numbers also show that in many cases the average top 5 bank is in the range of 15-17% which was shown earlier as being an unrealistic coverage ratio for a DGS. We also have to keep in mind that these are average numbers so individual banks have in many cases a much higher percentage of the total assets than the average.

It is thus clear that the Big bank failure considered in the IA report is by no means the worst case scenario and it would not even be possible to build a DGS that would be able to cope with the collapse of one of the largest banks in a Member State.

2.9.3 Big banking failure vs. systemic crisis

The discussion of the Big bank failure as defined by the JRC report is also brought into context by looking at the collapse in Iceland back in October 2008. In that month the three largest commercial banks amounting to an estimated 92% of the banking system in Iceland collapsed within one week. It turned out that once one of them collapsed all the other lost credibility and the Icelandic state did not have the resources to guarantee them.

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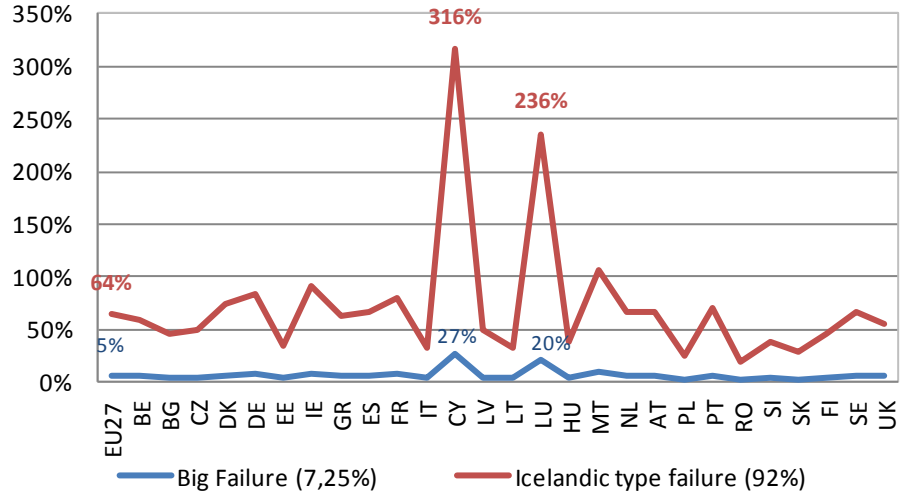
Figure 20 Shocks in terms of eligible deposits as percentage of GDP in 2007.



Source: JRC report, EBF and calculations of IoES.

Consider first the big failure scenario, in which the size of the failure corresponds to 7.25% of eligible deposits. On average, this failure would in 2007 have represented 5% of GDP, but the impact would though have been substantially greater in Cyprus and Luxembourg, or 27% and 20% of GDP respectively.

A system crisis, corresponding to 92% of all eligible deposits, would on average have amounted to 69% of GDP. The impact on the economies of Cyprus, Luxembourg and Malta would have been more than 100% of GDP, and the impact on France, Ireland and Germany ranged between 86% and 98%. In Iceland, the shock would have been considerably smaller or 71% of GDP.

2.9.4 Systemic crisis

Systemic crisis left unresolved in IA report

The Impact Assessment report discusses the importance the system of being able to withstand a systemic crisis and states (p. 20) that even "if a single DGS might never be able to cope with a failure of a large cross-border banking group, they should at least be able to deal with medium-sized failures. It should be noted that the DGS Directive is applicable regardless of whether there is a systemic crisis or not. Otherwise it could not fulfil its objective to prevent bank runs. If DGS have insufficient funds, depositors may be paid out only after a very long delay or not paid out at all. If depositors are aware of this, they will lose confidence in DGS and may potentially run on their banks."

However, the report stresses that there is no legal obligation for the government to step in if a systemic crisis occurs (page 8): "It has to be borne in mind that DGS are financed by banks and the Commission intends to maintain this requirement. That means that the budget of Member States is not directly concerned by the DGS Directive. The recent crisis has shown

that in a systemic crisis, DGS may reach their limits. However, even if in such cases governments stepped in under strict obedience of state aid rules, this would not be triggered under a legal obligation in the DGS Directive and 'viability for Member States' is therefore not subject of this impact assessment."

The argument of the report is that is important to have a system that can cope with systemic crisis and while the banks will not be able to withstand it (they can practically not withstand building up a fund which can reimburse 7.25% of deposits in 10 years), the government is not obliged to intervene. The IA report makes no attempt to offer any other solution to the issue of systemic crisis and simply avoids the scenario stating (p 21) that this "report does not, however, deal with systemic risk since criteria for measuring it are only being developed on international level". Further, (p. 62) "[I]ndicators for systemic risk of a bank have not been taken into account since the development of criteria for Systematically Important Financial Institutions is still in progress."

Past warnings about the importance of systemic crisis

This lack of academic research on systemic crisis is somewhat surprising as the issue has been well known for years. Reports, including reports from the EU, have touched on this issue. As an example a JRC report (2007) states that (p. 9) one "issue that has not been included in the present analysis, but might influence the impact of harmonizing the way DGS are funded, is the investigation of the effectiveness of the present systems in the event of a banking crisis, eventually with cross borders exposure." It claims that insufficient information exists to estimate this scenario and that it "would need the collection of more detailed data on occurred defaults and, in general, on crises and all types of intervention".

In another ECB working paper, Brandt and Hartmann (2000) state (p. 56) that overall "we feel that the recent financial crises (Nordic banking crises, Mexico, East Asia, Japanese banking crisis, Russia etc.) sufficiently underline the importance of understanding systemic risk as a tool in defining policies and encouraging market initiatives aiming at financial stability"

The warnings are echoed in the annual report of the French Central bank for the year 2000: "Although the goal of enhancing the stability of the banking system was clearly stated, the system introduced in France, as in most countries possessing formal deposit guarantee schemes, was not meant to deal with systemic crises, for which other measures are needed."

But the warnings have been around for much longer. Zavvos (1994), for instance, argued that „Systemic risks should be the main focus of all banking regulations and supervisions."

The existence of systemic risk

De Lisa et. al (2011) go even further, by simply stating that the Italian DGS is not adequate "in bad market conditions with substantial contagion between banks". The paper looks at systemic crisis related to the Italian DGS with a theoretical approach based on the Basel II regulatory framework. They considered two major sources of systemic risk (p. 123): "the correlation between banks' assets and interbank lending contagion." Their conclusion was that even if "the target size of the Italian deposit insurance system covers up to 98.96% of its potential losses" their analysis point out the Italian DGS "can be assessed as adequate only in normal times and not in bad market conditions with substantial contagion [via interbank

lending] between banks." Moreover, the paper underlines (p. 125) „the need for supervisory authorities to treat contagion risk as a key element when assessing the fund adequacy of a DIS and, more generally, when designing the overall financial safety net."

In an earlier paper, De Lisa et. al (2010) had applied similar analysis to the DGS in the UK, Germany and Spain. They conclude that "the flexibility of this model makes it very relevant to policy makers, as by changing data and assumptions it allows answering various questions relevant to deposit insurance regulation."

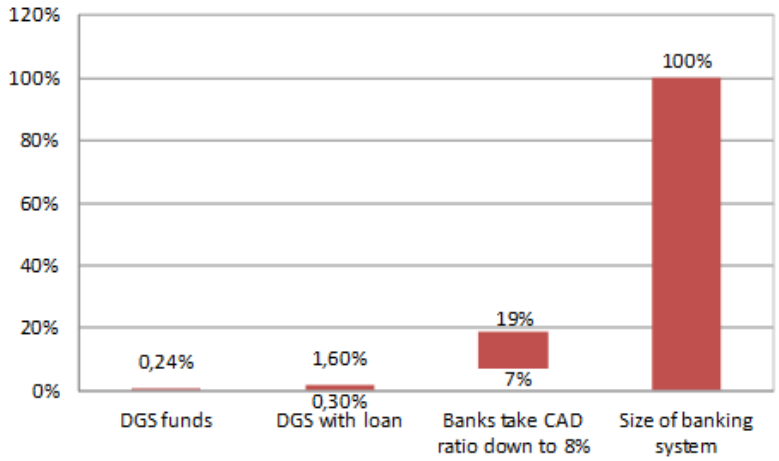
Despite these repeated warnings about the importance and risk of systemic crisis in the banking system in the last decades and two years after the collapse of the Icelandic banking system, which showed that a systemic crisis was not just a theoretical possibility, the IA report simply ignores the issue of systemic crisis and states that "criteria for measuring it are only being developed".

2.10 Summary

The discussions in the previous chapters show that the DGS system, using all resources of the banking systems, in the EU is only able to cope with a bank failure of maximum 20% of the banking system. The highest number is basically a theoretical one as it assumes 85% recovery of the failed banks' estates and leaves the system completely vulnerable after the reimbursement of deposits, with the DGS empty and the remaining banks with equity down to the regulatory minimum.

The DGS themselves have resources to cope with a 0.24% collapse. If the recovery of the estate is also taken into consideration their ability goes up to max 1.6% and even if the banks chip in all their "spare" equity, the ability of the system is below 20%.

Figure 21 The ability of the average EU-27 DGS to cope with a banking failure.



Source: IA report and calculations of IoES.

Both the Impact Assessment report and the JRC report even show that increasing the DGSs over a period of 10 years so that they are able to withstand a 7.25% bank failure after that would reduce the banks' profits by 30-40% during the ten year of build-up.

On average the 5 largest banks in the EU have a market share of close to 60%. It is thus clear that if one of these banks would fail, the remaining system would doubtfully be able to cope with the effect, especially if the largest banks among them fail.

Further, the EC Commission reports also do not address the systemic risk of interlinking between banks. In De Lisa et. al (2011) the authors come to the conclusion that the Italian DGS is not adequate "in bad market conditions with substantial contagion [via interbank lending] between banks". Thus if one bank collapses there is a serious risk that it will affect the viability of the other banks. This was clearly illustrated by the rippling effects the collapse of Lehman Brothers had on the world financial sector.

3 The Icelandic DGS in comparison

3.1 DGS laws

The Icelandic DGS (henceforth also called "TIF") is a private foundation operating pursuant to Act No. 98/1999 under the surveillance of the Icelandic Financial Supervisory Authority, FME.

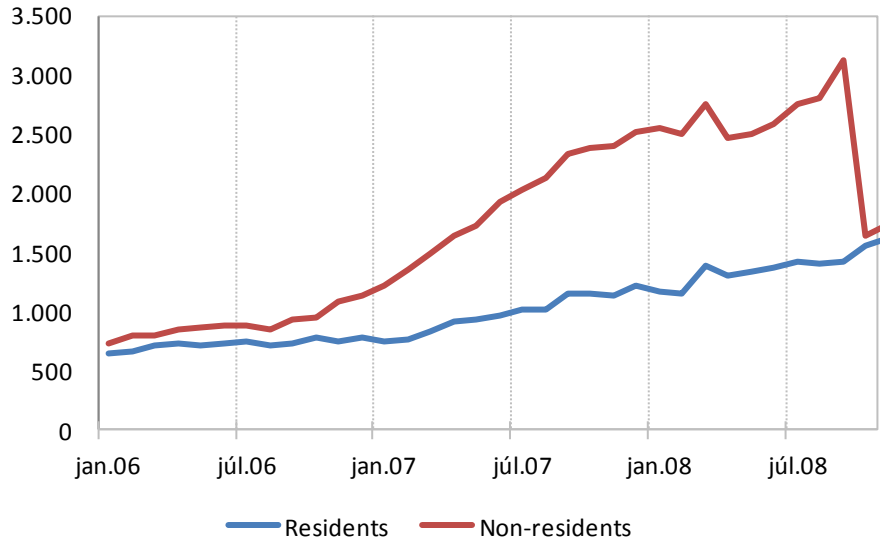
The objective of the Act is to guarantee a minimum level of protection to depositors in commercial banks and savings banks, and to customers of companies engaging in securities trading pursuant to law, in the event of difficulties of a given company in meeting its obligations to its customers according to the provisions of the Act.

Commercial banks, savings banks, companies providing investment services, and other parties engaging in securities trading pursuant to law and established in Iceland, shall be members of the fund. The same applies to any branches of such parties within the European Economic Area. Such Member Companies shall not be liable for any commitments entered into by the fund beyond their statutory contributions to it.

3.2 The coverage ratio of the Icelandic DGS

According to law no. 98/1999, the total assets of the depositors´ department may not be lower than 1.0% of average insured deposits of commercial banks and savings banks the previous year. If the fund's total assets fall short of this minimum at year end, all commercial and savings banks shall make contributions in order for the minimum to be reached by March 1st of the following year.

Figure 22 Total deposits in Icelandic financial institutions. ISK billion.



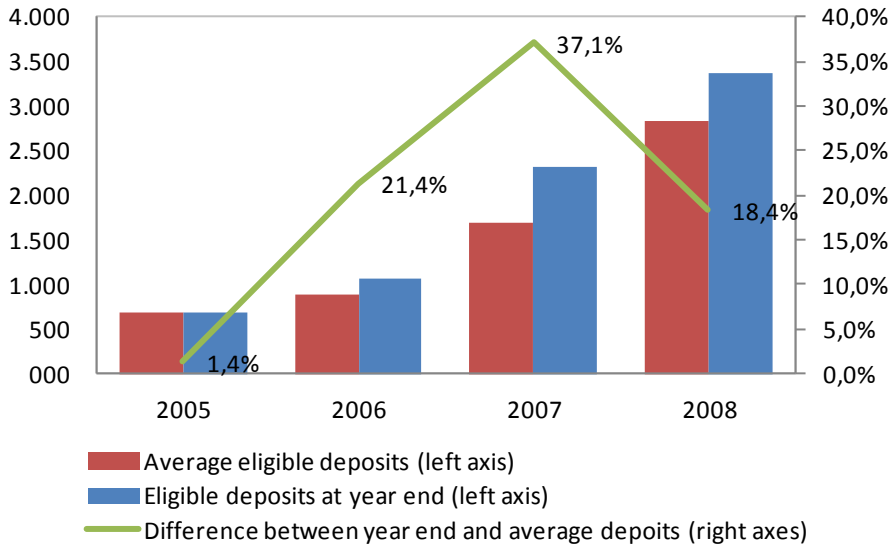
Source: Central bank of Iceland.

Under moderate growth, a setup like the one described above, will keep the total size of DGS fund around 1% of eligible deposits. However, in rapid growth of deposits the average of the preceding year may be considerably different than the amount of deposits at the end of the year leading to a lower actual coverage ratio. This is exactly what happened in Iceland in the years preceding the collapse in 2008, mostly due to increase in deposits held by non-residents, as can be seen in

Figure 22.

The total amount of deposits in Icelandic banks increased from around ISK 1.100 billion at the end of 2006 to ISK 2.500 billion at the end of 2007. This led to a 37% difference between the calculated average of deposits used as basis for the Icelandic banks' contributions to the fund and the deposits at year end.

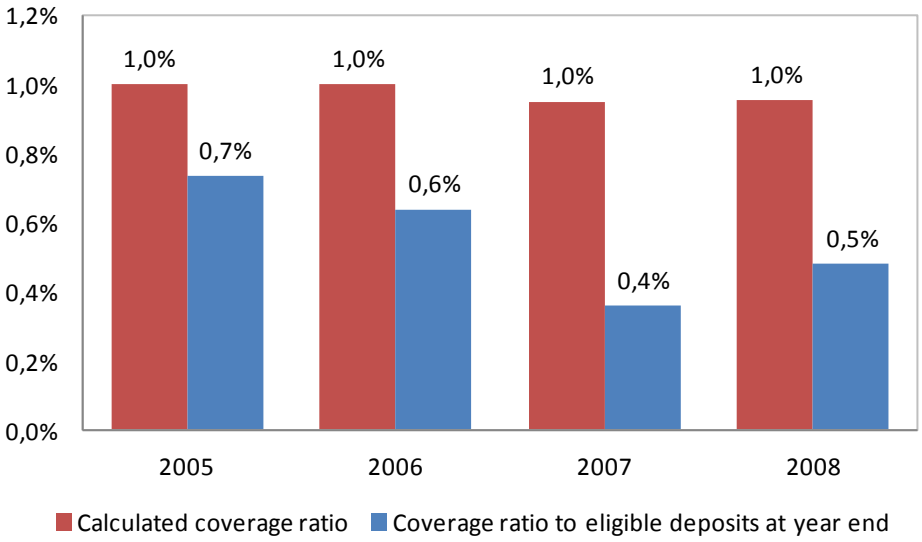
Figure 23 Difference between total eligible deposits at year end and average deposits over the year. ISK billion.



Source: Icelandic DGS.

The rapid growth of deposits, mostly abroad, thus led to the differences in the actual coverage ratio of the DGS and the calculated goal of 1% which was always reached, as can be seen in Figure 24.

Figure 24 Difference of calculated coverage ratio and coverage ratio at year end



Source: Icelandic DGS.

At the time of the collapse the DGS in Iceland thus held 0.5% of the covered deposits while still maintaining a 1% coverage ratio according to the how the coverage ratio was calculated.

3.3 Two scenarios

In this section information about two scenarios related to TIF, the Icelandic DGS, are added to the previous analysis undertaken in Section 2. These are:

IS a) - 2007
This scenario looks at the situation at year end 2007. Although the number changed until the collapse in October 2008, there exist no EU commission reports yet with information regarding the status of the EU DGS in 2008. Here it has to be noted again that all deposits in Iceland are eligible deposits.

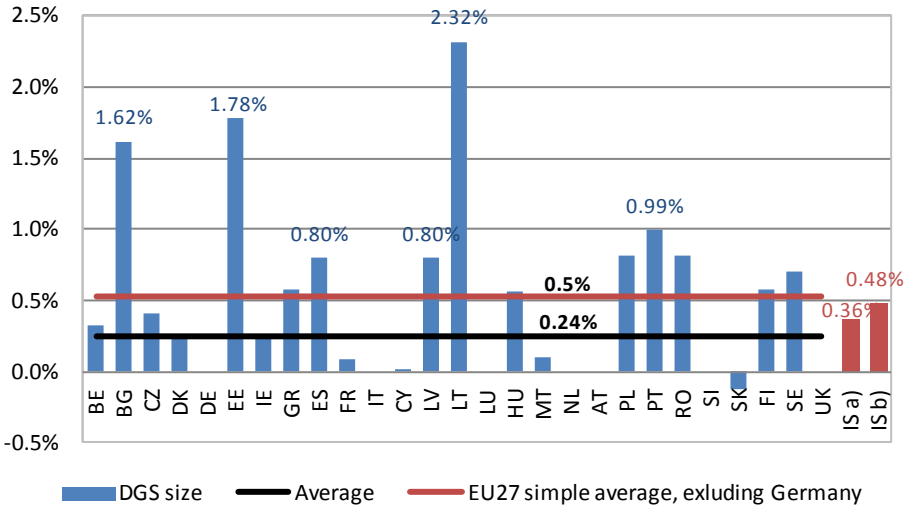
IS b) - 2008
This scenario looks at the situation at year end 2008. This scenario more accurately describes the situation at the time of the banking collapse in October 2008 but no direct comparison exists with other countries.

One major reason for the difference between the two scenarios is the sharp depreciation of the Iceland krona (ISK) in 2008, in the wake of and after the banking collapse in October which led to a sharp decrease in GDP measured in euros between the two years, from €15 billion to €10 billion. At the same time the DGS increased from €54million to €95 million while eligible deposits increased from €15 billion to €20 billion.

3.4 Comparison 1: DGS size

Earlier discussion has focused on the coverage ratio and funding of the DGS in the European Union, but here TIF is brought into the comparison. In this section we concentrate on the coverage ratio which measures the funds of the DGS against the eligible deposits[32] and thus shows how much of the eligible deposits the DGS can repay in case of bank failure.

Figure 25 *Ratio of funds of the DGS to eligible deposits (coverage ratio) in the EU (2007) and Iceland (2007 and 2008).*



Source: JRC report, European banking Federation, and TIF.

Figure 25 shows the coverage ratio in Member States and Iceland in 2007 using the two measures discussed above for Iceland. The two horizontal lines show the simple average ratio of all EU countries (0.5%) and a weighted average (0.24%). In 2007, TIF had a coverage ratio of 0.4%, just below the 0.5% simple average of all EU Member States (both ex-ante and ex-post).[33] As the payments are made the year after, TIF had grown to 0.5% by the time the collapse occurred. This is the same as the coverage ratio of DGS funds in EU Member states such as France, Denmark, and of course much higher than the ratio in Member States with ex-post financing, such as the UK and the Netherlands, as those DGSs are empty by design.

[32] = DGS Funds / Eligible deposits.

[33] Here we change from the weighted average of 0.24% used in Section 2 above, which gives the ability of DGS on an EU level, to the simple average of 0.50% which compares individual countries. We include ex-post funds as they are empty and will thus not be able to contribute to a possible bank failure.

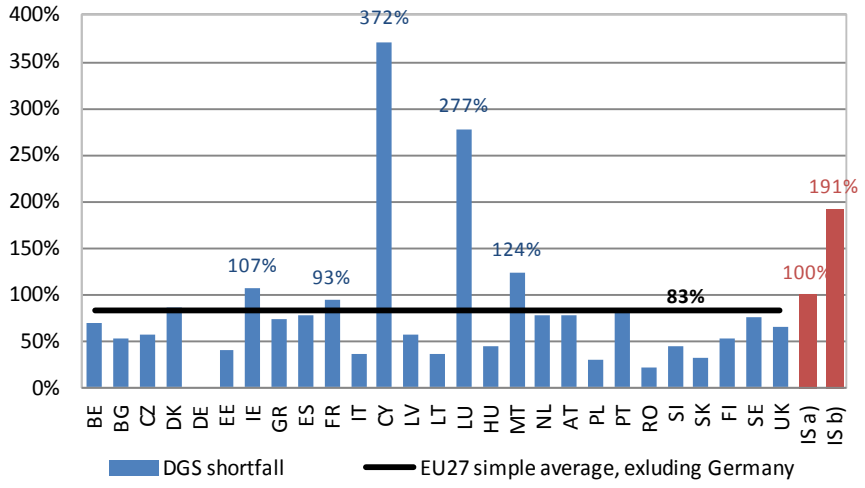
3.5 Comparison 2: DGS shortfall vs. GDP

Like any other insurance scheme, the DGS is set up in such a manner that the fund size will always be smaller than total claims (eligible deposits). Let this difference between DGS fund size and the total claims be called the DGS shortfall.[34]

$$DGS\ shortfall = Eligible\ Deposits - DGS\ funds$$

Consider now a systemic crisis that would force the DGS in each country to pay out funds corresponding to all reimbursed deposits. It is informative to analyse how large such a shock would be the national economy and central government finances. Accordingly, in this section we analyse the impact of the DGS shortfall on GDP, while the effects on government debt and revenue are investigated in Section 3.6 and Section 3.7 respectively and the shock on a per capita basis is analysed in Section 3.8.

Figure 26 DGS shortfall as a percentage of GDP in the EU (2007) and Iceland (2007 and 2008).



Source: JRC report, EBF, TIF, Eurostat and calculations of IoES.

The shock due to a DGS shortfall in 2007 on Iceland would amount to 100% of GDP at the end of 2007, roughly equal to the EU average of 83% (horizontal line in Figure 8) but still only one fourth of what the shock would have been in Cyprus and roughly one third of the shock Luxembourg would encounter. Thus Iceland's DGS shortfall as a percentage of GDP was slightly above EU average and far from being the largest within the EU.

[34] We continue using eligible deposit as a base as it is used in both the JRC report and the IA report.

3.6 Comparison 3: DGS shortfall and government debt

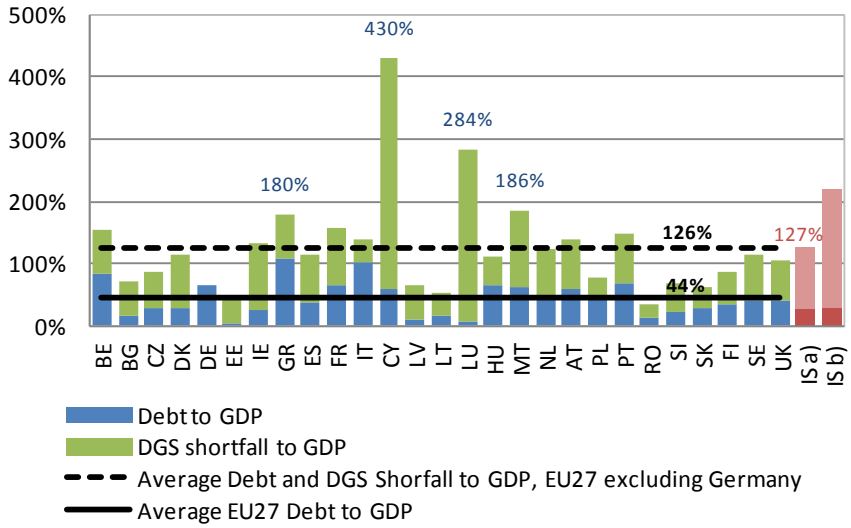
In

Figure 27

Figure 27, we analyse the DGS shortfall in relation to the general government gross debt. By this, we don't intend to imply that the government would in any meaning be responsible for the DGS, should available funds not cover the payments necessary to deal with the crisis at hand. Rather, the intention is to demonstrate how large the shortfall is in relation to government debt in each country.

The simple average general government gross debt of the EU-27 countries was 44% (lower horizontal line in Figure 27) at the end of 2007 and the DGS shortfall would on average have corresponded to 83% of government debt at the same time, ignoring Germany. Thus the shock of a complete collapse would, on average, almost triple the total debt of Member States at that time, and result in the average debt climbing to 126% of GDP (higher horizontal line in Figure 27). Needless to say this could have a downward pressure on the sovereign credit rating of all of the EU nations.

Figure 27 The effect of DGS shortfall on general government gross debt in the EU (2007) and Iceland (2007 and 2008).



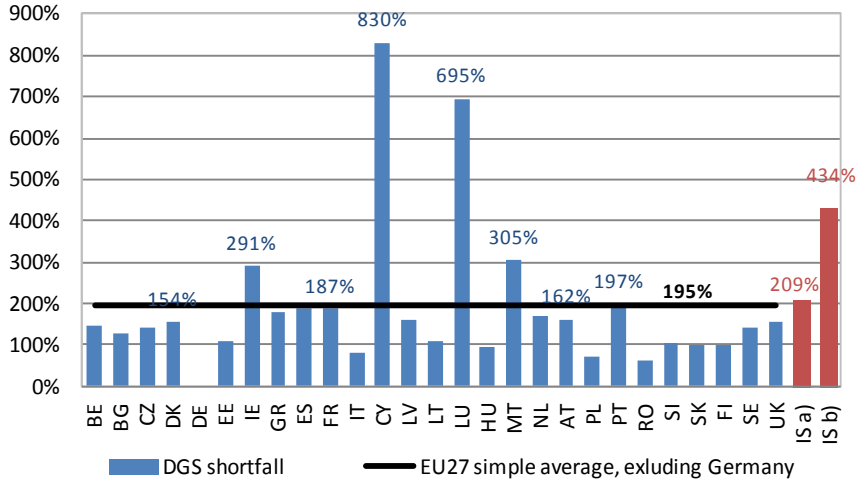
Source: JRC report, TIF, EBF, Eurostat and calculations of IoES.

Adding the DGS shortfall to the general government debt raises the debt to 127% of GDP for Iceland in 2007. This is close to what the post-crisis average debt in EU Member States would be, but only one-third of what government debt would be in Cyprus and half of what the debt would amount to in Luxembourg. The situation in Iceland is the same as the average for EU Member states and close to that of countries such as Denmark, Sweden, Spain, Italy, the UK and France.

3.7 Comparison 4: DGS shortfall vs. government revenue

Here, the ratio between DGS and total general government revenues is explored. In 2007, this ratio averaged 195% (horizontal line in Figure 28) in the EU and a little higher, or 209%, in the case of Iceland.

Figure 28 DGS shortfall as a percentage of total general government revenue in the EU (2007) and Iceland (2007 and 2008)



Source: JRC report, TIF, EBF, Eurostat and calculations of IoES.

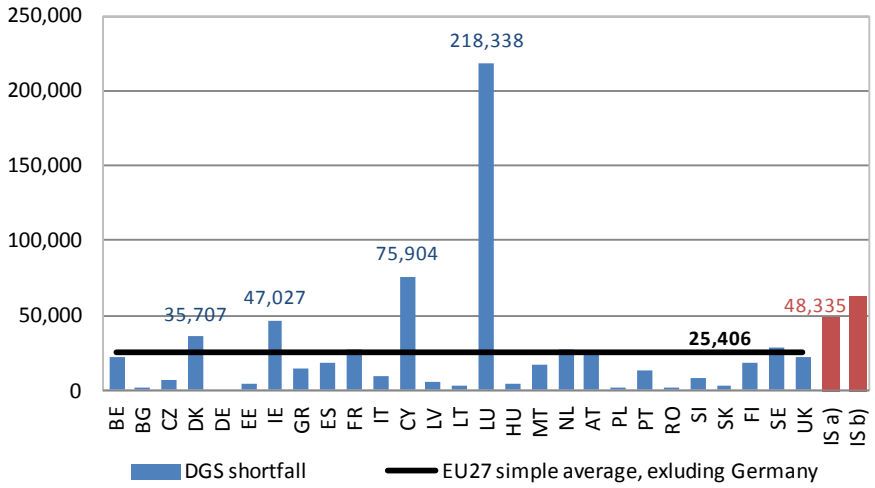
In Cyprus, the DGS shortfall represented 830% of total general government revenues and 695% in Luxembourg. These numbers are up to four times higher than in Iceland. In France, Denmark, Ireland and Portugal the ratio between DGS shortfall and government revenue would be similar to the ratio in Iceland.

3.8 Comparison 5: DGS shortfall per capita

In Figure 29, the DGS shortfalls are analysed on a per capita bases. As the horizontal line reveals, the shortfall would on average have amounted to €25,400 in the EU. However, the per capita shortfall would have been much higher in Luxembourg and Cyprus, or €218,000 and €76,000 respectively, and larger than €30,000 in both Denmark and Ireland.[35] In Iceland the shortfall would have amounted to €48,000. The per capita shortfall in Iceland is thus only 25% of the highest level in the EU.

[35] It should be noted that the Dutch DGS is funded ex-post.

Figure 29 DGS shortfall per capita in € in the EU and Iceland (2007 and 2008).



Source: Source: JRC report, TIF, EBF, Eurostat, and calculations of IoES.

3.9 Summary

The above comparison clearly reveals that the Icelandic TIF had a coverage ratio just below the average of the EU countries of 0.50%. Iceland also performs relatively well in the case of a systemic crisis that would force the DGS in each country to pay out funds corresponding to all covered deposits. Thus, Iceland's DGS shortfall as a percentage of GDP is just above EU average and far from being the largest within the EU. Further, if the DGS shortfall is added to the general government debt, Iceland would be just above the average and well below the largest total debt/shortfall ratio in the EU. Similarly, the DGS shortfall as a share of total general government revenues is similar in Iceland to the average of the Member States. Finally, the per capita shortfall in Iceland is only 25% of the highest level in the EU. These results indicate that in the case of a systemic crisis, the situation in Iceland would in no way differ from the situation in many EU-countries, and that some Member States would be much poorly equipped to deal with such a calamity.

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Appendices

Scenarios investigated by IA report

The analysis in the IA report is mostly based on figures from a previous JRC study which "developed numerious scenarious (changes in the level and scope of coverage, funding mechanisms, payout, etc.) in order to facilitate the assessment of the potential impact of various policy options on stakeholders" (p. 30).

Section 7.8 (p. 52) of the IA report focuses on funding mechanisms and levels, where the following policy options were taken into account. It should be noted that options 2 and 3 are cumulative but alternative to option 1, options 4 and 5 are cumulative to options 1, 2 or 3.

Option 1 (current approach): No harmonisation of funding mecahnisms and no particular requirements on DGS funding level.

Option 2: Harmonised approach to selected elements of DGS funding:

- A target level for the total (ex-ante and ex-post) funds that should be available to DGS in order to make them able to cope with a bank failure of a certain size (e.g. a mid-size or big failure); ex-post funds would be needed if the number of amount of payouts would necessitate it;
- A limit for ex-post funds (to ensure that ex-post funds would not be collected without limits during a crisi as it could negatively influence healthy banks)

A limit for borrowing by DGS.

Option 3: Harmonised approach to funding mechanisms and levels, i.e. making ex-ante funding mandatory supported by ex-post funding (other elements, such as the contribution base, the scope of coverage, the target level and limits for ex-ante/ex-post funds, need to be harmonised as well) – to be achieved within a specified period of time (e.g. 5 or 10 years since an immediate high target level could not be achieved by banks in Member States with ex-post financed DGS).

Option 4: Using the liquidity remaining in a bank at the time of failure to reimburse depositors. This would necessarily entail that depositors are privileged (at least up to the coverage level) over all other creditors in the insolvency proceedings. Such a regime is in place in Switzerland and also in the US.

Option 5: Limiting the annual maximum contribution to DGS.

The scenarios analysed in the report are listed below in Table 4.

Table 4: Analysed scenarios as to the target level for the total funds.

Scenarios		**Size of the failure** (% of the total amount of eligible deposits)
Scenarios based on the size of a failed banks		
Big bank failure	Failure of a big member bank (average of top-10 member banks, funds to be collected in 10 years)	7.25% [36]
Small bank failure	Failure of a small member bank (average of other than top-10 banks, funds to be collected in 1 year)	0.36%
Scenarios based on DGS payout		
Big DGS payout	Maximum cost to DGS for a failure occurred in the EU MS in 2008 (funds to be collected in 10 years)	1.96%
Medium DGS payout	Average costs to DGS for a failure occurred in the EU MS in 2008 (funds to be collected in 1 year)	0.60%

Source: Based on Table 23 (p. 56) JRC report.

[36] This is the simple average of the data from 32 DGS in 21 Member States (the average weighted according to eligible deposits is very similar, i.e. 7%).

Tables

Table A1 Potential total costs in normal times
(i.e. if only ex-ante contributions are collected).

Member States	2007 fund size	2008 contributions	Total funds in 2008	Scenarios based on banks' size		Scenarios based on DGS payout	
				Big failure	Small failure	Big payout	Medium payout
BE	765,000	50,895	866,790	12,723,750	631,800	3,439,800	1,053,000
BG	265,768	69,893	512,567	894,646	44,424	241,863	74,040
CZ	304,492	63,969	432,430	4,120,803	204,619	1,114,038	341,032
DK	489,410	0	901,032	10,602,364	526,462	2,866,294	877,437
DE	n.a.	n.a.	n.a.	128,625,585	6,386,926	34,773,262	10,644,876
EE	116,043	16,341	148,610	354,158	17,586	95,745	29,310
IE	526,100	143,300	669,400	11,056,021	548,989	2,988,938	914,981
GR	942,181	602,109	2,748,508	8,842,712	439,086	2,390,581	731,811
ES	6,502,717	412,500	8,133,736	44,343,335	2,201,876	11,987,991	3,669,793
FR	1,624,000	95,400	1,719,400	96,000,135	4,766,903	25,953,140	7,944,839
IT	0	0	0	31,231,772	1,550,819	8,443,348	2,584,698
CY	8,392	24,656	185,733	3,214,321	159,608	868,975	266,013
LV	95,599	24,334	119,934	650,676	32,309	175,907	53,849
LT	confidential	confidential	298,659	589,152	29,254	159,274	48,757
LU	0	0	0	5,653,347	280,718	1,528,353	467,863
HU	248,690	3,897	604,059	2,415,405	119,937	652,992	199,896
MT	6,861	713	27,048	365,882	18,168	98,914	30,280
NL	0	0	0	24,229,275	1,203,109	6,550,259	2,005,181
AT	0	0	0	11,495,409	570,807	3,107,724	951,344
PL	confidential	confidential	780,199	4,937,566	245,176	1,334,845	408,626
PT	1,377,232	47,877	1,943,563	7,536,615	374,232	2,037,485	623,720
RO	219,495	24,962	488,870	1,464,730	72,731	395,982	121,219
SI	0	0	0	839,023	41,662	226,826	69,436
SK	-22,544	37,241	292,981	980,381	48,681	265,041	81,135
FI	549,000	39,668	588,668	5,115,947	254,033	1,383,070	423,389
SE	1,821,744	58,694	1,907,451	14,104,155	700,344	3,812,985	1,167,240
UK	0	0	0	71,761,628	3,563,336	19,400,385	5,938,893
Total EU	**16,822,900**	**1,812,589**	**23,103,113**	**504,148,791**	**25,033,595**	**136,294,018**	**41,722,659**
Total MS with ex-ante DGS	**16,822,900**	**1,812,589**	**23,103,113**	**358,938,338**	**17,823,145**	**97,037,123**	**29,705,242**
Total MS with ex-post DGS	**-**	**-**	**-**	**145,210,453**	**7,210,450**	**39,256,895**	**12,017,417**

Source: IA report, Annex 14, p. 125.

Table A2 Potential total costs in a crisis situation
(i.e. if both ex-ante and ex-post contributions are collected).

Member States	2007 fund size	2008 contributions	Total funds in 2008	Scenarios based on banks' size		Scenarios based on DGS payout	
				Big failure	Small failure	Big payout	Medium payout
BE	765,000	50,895	866,790	16,965,000	842,400	4,586,400	1,404,000
BG	265,768	69,893	512,567	1,192,861	59,232	322,484	98,720
CZ	304,492	63,969	432,430	5,494,404	272,826	1,485,384	454,709
DK	489,410	0	901,032	14,136,485	701,950	3,821,726	1,169,916
DE	n.a.	n.a.	n.a.	171,500,780	8,515,901	46,364,349	14,193,168
EE	116,043	16,341	148,610	472,211	23,448	127,660	39,080
IE	526,100	143,300	669,400	14,741,361	731,985	3,985,251	1,219,975
GR	942,181	602,109	2,748,508	11,790,282	585,449	3,187,442	975,748
ES	6,502,717	412,500	8,133,736	59,124,446	2,935,835	15,983,988	4,893,058
FR	1,624,000	95,400	1,719,400	128,000,180	6,355,871	34,604,187	10,593,118
IT	0	0	0	41,642,363	2,067,759	11,257,797	3,446,264
CY	8,392	24,656	185,733	4,285,762	212,810	1,158,634	354,684
LV	95,599	24,334	119,934	867,568	43,079	234,543	71,799
LT	confidential	confidential	298,659	785,536	39,006	212,366	65,010
LU	0	0	0	7,537,796	374,291	2,037,804	623,818
HU	248,690	3,897	604,059	3,220,540	159,916	870,656	266,527
MT	6,861	713	27,048	487,843	24,224	131,886	40,373
NL	0	0	0	32,305,699	1,604,145	8,733,679	2,673,575
AT	0	0	0	15,327,212	761,075	4,143,632	1,268,459
PL	confidential	confidential	780,199	6,583,422	326,901	1,779,794	544,835
PT	1,377,232	47,877	1,943,563	10,048,820	498,976	2,716,647	831,626
RO	219,495	24,962	488,870	1,952,973	96,975	527,976	161,625
SI	0	0	0	1,118,697	55,549	302,434	92,582
SK	-22,544	37,241	292,981	1,307,175	64,908	353,388	108,180
FI	549,000	39,668	588,668	6,821,262	338,711	1,844,093	564,518
SE	1,821,744	58,694	1,907,451	18,805,539	933,792	5,083,980	1,556,320
UK	0	0	0	95,682,170	4,751,115	25,867,180	7,918,524
Total EU	**16,822,900**	**1,812,589**	**23,103,113**	**672,198,388**	**33,378,127**	**181,725,357**	**55,630,211**
Total MS with ex-ante DGS	**16,822,900**	**1,812,589**	**23,103,113**	**478,584,450**	**23,764,193**	**129,382,831**	**39,606,989**
Total MS with ex-post DGS	**-**	**-**	**-**	**193,613,937**	**9,613,933**	**52,342,527**	**16,023,222**

Source: IA report, Annex 15, p. 126.

Table A3 Potential total costs for DGS involved in bank resolution under scenarios based on government intervention.

Member States	2007 fund size	2008 contributions	Total funds in 2008	Total costs in normal times (only ex-ante contributions are collected)		Total costs in a crisis situation (both ex-ante and ex-post contributions are collected)	
				Big intervention	Medium intervention	Big intervention	Medium intervention
BE	765,000	50,895	866,790	6,669,000	2,281,500	8,892,000	3,042,000
BG	265,768	69,893	512,567	468,918	160,419	625,224	213,892
CZ	304,492	63,969	432,430	2,159,869	738,903	2,879,826	985,204
DK	489,410	0	901,032	5,557,101	1,901,114	7,409,468	2,534,818
DE	n.a.	n.a.	n.a.	67,417,548	23,063,898	89,890,064	30,751,864
EE	116,043	16,341	148,610	185,628	63,504	247,504	84,672
IE	526,100	143,300	669,400	5,794,880	1,982,459	7,726,506	2,643,279
GR	942,181	602,109	2,748,508	4,634,801	1,585,590	6,179,734	2,114,120
ES	6,502,717	412,500	8,133,736	23,242,024	7,951,219	30,989,365	10,601,625
FR	1,624,000	95,400	1,719,400	50,317,312	17,213,817	67,089,750	22,951,756
IT	0	0	0	16,369,756	5,600,180	21,826,342	7,466,906
CY	8,392	24,656	185,733	1,684,748	576,361	2,246,330	768,481
LV	95,599	24,334	119,934	341,044	116,673	454,725	155,564
LT	confidential	confidential	298,659	308,797	105,641	411,729	140,855
LU	0	0	0	2,963,134	1,013,704	3,950,845	1,351,605
HU	248,690	3,897	604,059	1,266,005	433,107	1,688,007	577,476
MT	6,861	713	27,048	191,773	65,606	255,697	87,475
NL	0	0	0	12,699,482	4,344,560	16,932,642	5,792,746
AT	0	0	0	6,025,180	2,061,246	8,033,573	2,748,328
PL	confidential	confidential	780,199	2,587,966	885,357	3,450,621	1,180,476
PT	1,377,232	47,877	1,943,563	3,950,226	1,351,393	5,266,968	1,801,857
RO	219,495	24,962	488,870	767,720	262,641	1,023,627	350,188
SI	0	0	0	439,764	150,446	586,352	200,594
SK	-22,544	37,241	292,981	513,855	175,793	685,140	234,390
FI	549,000	39,668	588,668	2,681,462	917,342	3,575,282	1,223,123
SE	1,821,744	58,694	1,907,451	7,392,522	2,529,021	9,856,696	3,372,028
UK	0	0	0	37,612,991	12,867,602	50,150,655	17,156,803
Total EU	**16,822,900**	**1,812,589**	**23,103,113**	**264,243,504**	**90,399,094**	**352,324,672**	**120,532,125**
Total MS with ex-ante DGS	**16,822,900**	**1,812,589**	**23,103,113**	**188,133,198**	**64,361,357**	**250,844,264**	**85,815,143**
Total MS with ex-post DGS	**-**	**-**	**-**	**76,110,306**	**26,037,736**	**101,480,409**	**34,716,982**

Source: IA report, Annex 15, p. 127.

Table A4 Amount and number of deposits in member states.

Member States	Total amount of deposits (in € thousands)			Number of deposits	
	Total deposits [1]	Eligible deposits	Covered deposits	Eligible deposits [2]	Fully covered deposits
BE	418,000,000	234,000,000	104,203,635	7,089,864	4,749,621
BG	20,011,078	16,453,260	8,416,078	10,503,424	10,408,988
CZ	81,530,720	75,784,888	36,014,721	14,571,797	14,312,163
DK	205,810,976	194,986,000	68,648,352	3,179,673	1,909,006
DE	3,244,528,000	2,365,528,000	1,952,842,121	78,033,794	68,457,592
EE	8,516,339	6,513,255	2,614,051	2,037,365	1,993,904
IE	confidential	203,329,118	90,545,441	6,819,401	4,965,379
GR	231,207,352	162,624,584	45,342,658	5,767,108	4,251,641
ES	1,257,005,863	815,509,600	360,085,300	87,328,803	79,904,289
FR	1,871,643,901	1,765,519,727	1,236,735,659	58,240,783	52,681,279
IT	2,106,736,038	574,377,415	402,347,830	44,363,926	43,165,796
CY	65,918,045	59,113,956	20,445,000	963,103	478,164
LV	14,624,816	11,966,456	2,969,375	2,289,882	1,670,463
LT	19,614,456	confidential	confidential	640,491	498,723
LU	688,056,543	103,969,600	12,953,500	3,487,009	2,497,053
HU	60,107,201	44,421,235	23,331,888	16,888,554	16,637,824
MT	32,783,800	6,728,864	2,354,324	246,701	174,967
NL	586,888,889	445,595,855	343,853,038	14,258,125	11,144,607
AT	286,000,000	211,409,819	124,948,903	17,890,150	16,678,551
PL	confidential	confidential	confidential	3,677,195	3,155,439
PT	183,986,884	confidential	confidential	16,143,897	15,105,103
RO	58,230,615	26,937,557	14,548,146	19,929,855	19,737,553
SI	19,530,540	15,430,308	8,820,533	2,074,726	1,760,810
SK	35,070,000	18,030,000	8,497,904	730,127	622,372
FI	96,576,837	94,086,374	41,014,103	3,472,675	2,434,399
SE	378,647,461	259,386,750	61,219,086	3,369,674	1,408,534
UK	4,311,271,463	1,319,754,071	566,868,083	24,442,582	17,259,885
EU	**16,797,827,066**	**9,271,701,898**	**5,661,966,190**	**448,440,684**	**398,064,106**
EU-15	**16,231,736,208**	**8,888,681,327**	**5,478,035,593**	**373,887,465**	**326,612,735**
EU-12	**566,090,858**	**383,020,571**	**183,930,598**	**74,553,219**	**71,451,371**

Source: IA report, Annex 2, page 103.

Table A5 Ratio of funds of the DGS to eligible deposits (coverage ratio) in the EU (2007) and Iceland (2007 and 2008).

	Eligible deposits [m€]	DGS fund size [m€]	Coverage ratio %
Weighted EU-27 average	6,906,174	16,827	0.244
Simple EU-27 average			0.526
BE	234,000	765	0.327
BG	16,453	266	1.615
CZ	75,785	304	0.402
DK	194,986	489	0.251
DE	2,365,528	n/a	
EE	6,513	116	1.782
IE	203,329	526	0.259
GR	162,625	942	0.579
ES	815,510	6,503	0.797
FR	1,765,520	1,624	0.092
IT	574,377	0	0.000
CY	59,114	8	0.014
LV	11,966	96	0.799
LT	10,835	251	2.320
LU	103,970	0	0.000
HU	44,421	249	0.560
MT	6,729	7	0.102
NL	445,596	0	0.000
AT	211,410	0	0.000
PL	90,806	736	0.810
PT	138,604	1,377	0.994
RO	26,938	219	0.815
SI	15,430	0	0.000
SK	18,030	-23	-0.125
FI	94,086	549	0.584
SE	259,387	1,822	0.702
UK	1,319,754	0	0.000
IS a)	14,925	54	0.359
IS b)	19,807	95	0.480

Source: JRC report , EBF and TIF.

Table A6 DGS shortfall as a percentage of GDP in the EU (2007) and Iceland (2007 and 2008).

	Eligible deposits [m€]	DGS fund size [m€]	DGS shortfall [m€]	GDP [m€]	DGS shortfall %
Simple EU-27 average					83.0
BE	234,000	765	233,235	335,610	69.5
BG	16,453	266	16,187	30,772	52.6
CZ	75,785	304	75,480	131,909	57.2
DK	194,986	489	194,497	227,534	85.5
DE	2,365,528	n/a		2,428,500	
EE	6,513	116	6,397	16,069	39.8
IE	203,329	526	202,803	189,933	106.8
GR	162,625	942	161,682	222,771	72.6
ES	815,510	6,503	809,007	1,053,161	76.8
FR	1,765,520	1,624	1,763,896	1,886,792	93.5
IT	574,377	0	574,377	1,554,199	37.0
CY	59,114	8	59,106	15,902	371.7
LV	11,966	96	11,871	21,027	56.5
LT	10,835	251	10,584	28,739	36.8
LU	103,970	0	103,970	37,491	277.3
HU	44,421	249	44,173	99,431	44.4
MT	6,729	7	6,722	5,434	123.7
NL	445,596	0	445,596	571,773	77.9
AT	211,410	0	211,410	274,020	77.2
PL	90,806	736	90,070	311,002	29.0
PT	138,604	1,377	137,227	169,319	81.0
RO	26,938	219	26,718	124,729	21.4
SI	15,430	0	15,430	34,562	44.6
SK	18,030	-23	18,053	54,811	32.9
FI	94,086	549	93,537	179,830	52.0
SE	259,387	1,822	257,565	337,944	76.2
UK	1,319,754	0	1,319,754	2,054,238	64.2
IS a)	14,925	54	14,871	14,932	99.6
IS b)	19,807	95	19,712	10,304	191.3

Source: JRC report ,Eurostat, EBF and TIF.

Table A7 The effect of DGS shortfall on general government gross debt in the EU (2007) and Iceland (2007 and 2008).

	Eligible deposits [m€]	DGS fund size [m€]	DGS shortfall [m€]	GDP [m€]	Government gross debt [m€]	DGS shortfall as a share of GDP %	Government debt as a share of GDP %	Total as a percentage of GDP %
EU-27 average						83.0	43.0	126.0
BE	234,000	765	233,235	335,610	282,106	69.5	84.1	153.6
BG	16,453	266	16,187	30,772	5,297	52.6	17.2	69.8
CZ	75,785	304	75,480	131,909	38,434	57.2	29.1	86.4
DK	194,986	489	194,497	227,534	62,601	85.5	27.5	113.0
DE	2,365,528	n/a		2,428,500	1,582,466			
EE	6,513	116	6,397	16,069	592	39.8	3.7	43.5
IE	203,329	526	202,803	189,933	47,159	106.8	24.8	131.6
GR	162,625	942	161,682	222,771	239,300	72.6	107.4	180.0
ES	815,510	6,503	809,007	1,053,161	381,401	76.8	36.2	113.0
FR	1,765,520	1,624	1,763,896	1,886,792	1,211,563	93.5	64.2	157.7
IT	574,377	0	574,377	1,554,199	1,602,107	37.0	103.1	140.0
CY	59,114	8	59,106	15,902	9,307	371.7	58.5	430.2
LV	11,966	96	11,871	21,027	1,911	56.5	9.1	65.5
LT	10,835	251	10,584	28,739	4,836	36.8	16.8	53.7
LU	103,970	0	103,970	37,491	2,502	277.3	6.7	284.0
HU	44,421	249	44,173	99,431	65,947	44.4	66.3	110.8
MT	6,729	7	6,722	5,434	3,385	123.7	62.3	186.0
NL	445,596	0	445,596	571,773	258,982	77.9	45.3	123.2
AT	211,410	0	211,410	274,020	165,024	77.2	60.2	137.4
PL	90,806	736	90,070	311,002	147,313	29.0	47.4	76.3
PT	138,604	1,377	137,227	169,319	115,587	81.0	68.3	149.3
RO	26,938	219	26,718	124,729	14,763	21.4	11.8	33.3
SI	15,430	0	15,430	34,562	7,981	44.6	23.1	67.7
SK	18,030	-23	18,053	54,811	16,325	32.9	29.8	62.7
FI	94,086	549	93,537	179,830	63,225	52.0	35.2	87.2
SE	259,387	1,822	257,565	337,944	133,185	76.2	39.4	115.6
UK	1,319,754	0	1,319,754	2,054,238	851,832	64.2	41.5	105.7
IS a)	14,925	54	14,871	14,932	4,057	99.6	27.2	126.8
IS b)	19,807	95	19,712	10,304	2,924	191.3	28.4	219.7

Source: JRC report ,Eurostat, EBF and TIF.

Table A8 DGS shortfall as a percentage of total general government revenue in the EU (2007) and Iceland (2007 and 2008).

	Eligible deposits [m€]	DGS fund size [m€]	DGS shortfall [m€]	GDP [m€]	DGS shortfall as a share of GDP %	Government revenue as a share of GDP %	DGS shortfall as a share of government revenue %
EU-27 average					83.0	42.6	194.7
BE	234,000	765	233,235	335,610	69.5	48.0	144.8
BG	16,453	266	16,187	30,772	52.6	40.9	128.6
CZ	75,785	304	75,480	131,909	57.2	40.3	142.0
DK	194,986	489	194,497	227,534	85.5	55.6	153.7
DE	2,365,528	n/a		2,428,500			
EE	6,513	116	6,397	16,069	39.8	36.4	109.4
IE	203,329	526	202,803	189,933	106.8	36.7	290.9
GR	162,625	942	161,682	222,771	72.6	40.8	177.9
ES	815,510	6,503	809,007	1,053,161	76.8	41.1	186.9
FR	1,765,520	1,624	1,763,896	1,886,792	93.5	49.9	187.3
IT	574,377	0	574,377	1,554,199	37.0	46.0	80.3
CY	59,114	8	59,106	15,902	371.7	44.8	829.7
LV	11,966	96	11,871	21,027	56.5	35.6	158.6
LT	10,835	251	10,584	28,739	36.8	33.6	109.6
LU	103,970	0	103,970	37,491	277.3	39.9	695.0
HU	44,421	249	44,173	99,431	44.4	45.6	97.4
MT	6,729	7	6,722	5,434	123.7	40.5	305.4
NL	445,596	0	445,596	571,773	77.9	45.4	171.7
AT	211,410	0	211,410	274,020	77.2	47.6	162.1
PL	90,806	736	90,070	311,002	29.0	40.3	71.9
PT	138,604	1,377	137,227	169,319	81.0	41.1	197.2
RO	26,938	219	26,718	124,729	21.4	35.3	60.7
SI	15,430	0	15,430	34,562	44.6	42.4	105.3
SK	18,030	-23	18,053	54,811	32.9	32.4	101.7
FI	94,086	549	93,537	179,830	52.0	52.7	98.7
SE	259,387	1,822	257,565	337,944	76.2	54.5	139.8
UK	1,319,754	0	1,319,754	2,054,238	64.2	41.1	156.3
IS a)	14,925	54	14,871	14,932	99.6	47.7	208.8
IS b)	19,807	95	19,712	10,304	191.3	44.1	433.8

Source: JRC report ,Eurostat, EBF and TIF.

Table A9 DGS shortfall per capita in the EU (2007) and Iceland (2007 and 2008).

	Eligible deposits [m€]	DGS fund size [m€]	DGS shortfall [m€]	Population	DGS shortfall per capita [€]
EU-27 average					25,406
BE	234,000	765	233,235	10,584,534	22,035
BG	16,453	266	16,187	7,679,290	2,108
CZ	75,785	304	75,480	10,287,189	7,337
DK	194,986	489	194,497	5,447,084	35,707
DE	2,365,528	n/a		82,314,906	
EE	6,513	116	6,397	1,342,409	4,765
IE	203,329	526	202,803	4,312,526	47,027
GR	162,625	942	161,682	11,171,740	14,472
ES	815,510	6,503	809,007	44,474,631	18,190
FR	1,765,520	1,624	1,763,896	63,645,065	27,715
IT	574,377	0	574,377	59,131,287	9,714
CY	59,114	8	59,106	778,684	75,904
LV	11,966	96	11,871	2,281,305	5,204
LT	10,835	251	10,584	3,384,879	3,127
LU	103,970	0	103,970	476,187	218,338
HU	44,421	249	44,173	10,066,158	4,388
MT	6,729	7	6,722	407,810	16,483
NL	445,596	0	445,596	16,357,992	27,240
AT	211,410	0	211,410	8,282,984	25,523
PL	90,806	736	90,070	38,125,479	2,362
PT	138,604	1,377	137,227	10,599,095	12,947
RO	26,938	219	26,718	21,565,119	1,239
SI	15,430	0	15,430	2,010,377	7,675
SK	18,030	-23	18,053	5,393,637	3,347
FI	94,086	549	93,537	5,276,955	17,726
SE	259,387	1,822	257,565	9,113,257	28,263
UK	1,319,754	0	1,319,754	60,781,346	21,713
IS a)	14,925	54	14,871	307,672	48,335
IS b)	19,807	95	19,712	315,459	62,487

Source: JRC report ,Eurostat, EBF and TIF.