



**Relative size of the Icesave claims  
and financial strength of the  
deposit guarantee schemes  
in the EU and Iceland**

March 2012

**HAGFRÆÐISTOFNUN**



HÁSKÓLI ÍSLANDS

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## **Relative size of the Icesave claims and financial strength of the deposit guarantee schemes in the EU and Iceland**

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## **Introduction**

This report focuses on two aspects related to the Icesave claims put forward by the British and Dutch governments. On the one hand, the relative size of the Icesave claims, and on the second the ability of the EU deposit guarantee schemes (DGS) which were in place in 2008 to deal with financial crisis. In the second part of the report special attention is placed on comparing the ability of the Icelandic DGS to cope with banking crisis to the ability of the DGS of individual Member States.

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

March 6<sup>th</sup> 2012

A handwritten signature in black ink, appearing to read 'Sveinn Agnarsson', written in a cursive style.

Dr. Sveinn Agnarsson  
Director of the Institute of Economic studies

# 1 Relative size of the Icesave claims

At the end of the year 2007, Iceland's net foreign debt amounted to 125% of gross domestic product (GDP). 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.

During the boom year preceding the crisis the financial situation of the Icelandic government improved substantially.

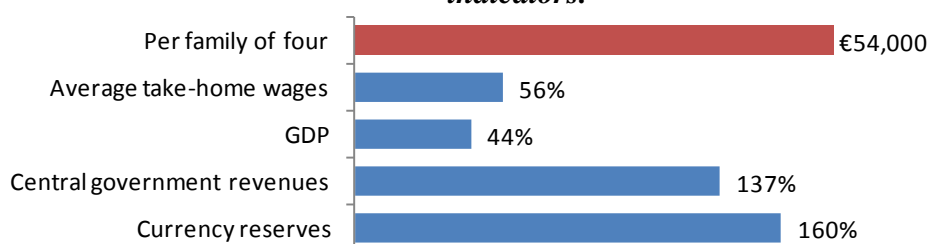
According to Statistics Iceland, the net position, i.e. assets minus claims (excluding pension obligations), of the central government was positive and amounted to 18.4% of GDP in 2007, but deteriorated after the crisis and was 0.1% in 2008, -11.8% in 2009 and -19.8% in 2010. It can therefore be claimed that the direct cost of the crisis for the central government amounts to 38% of GDP. These figures do neither take into account the Icesave-claims of the British and Dutch nor loans from the IMF and Norway to the Central Bank of Iceland.

In 2008, the GDP of Iceland was 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.

The Icesave claims, made by the British and Dutch governments, amount to €4.3 billion which corresponded to 44% of GDP in 2008, 138% of central government revenue in that year and 160% of the currency reserves 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 public sector foreign debt. Furthermore, the claims are equal to €54,000 per family of four and represent per capita 56% of average take-home wages of employees in 2008.

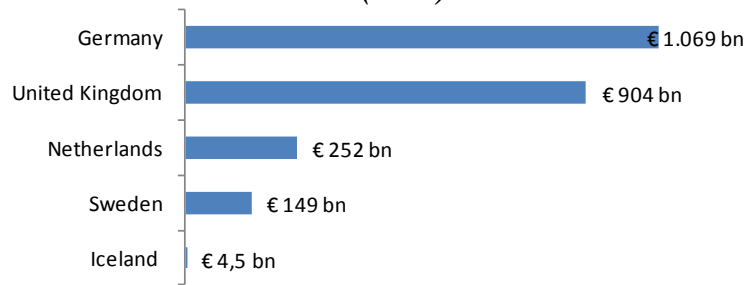
*Figure 1: Size of Icesave claims relative to various macroeconomic indicators.*



*Source: OECD, Eurostat, Central Bank of Iceland, Statistics Iceland and Icelandic Finance Ministry.*

Another way to understand the size of the Icesave claim is to calculate such a claim in reference to other countries' GDP. This shows that in relation to UK GDP in 2007, the claim would be €900b and in case of the Netherlands, the amount would be €250bn.

*Figure 2: Size of Icesave claims relative to GDP of other countries (2007).*



*Source: Eurostat, IoER.*

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

In EU the directive 94/19/EC on deposit guarantee schemes entered into force in 1994 with the aim of strengthening depositor confidence and protecting their wealth by establishing Deposit Guarantee Schemes (DGS) which would reimburse deposits up to a certain ceiling, the coverage level, if a bank failure occurs.

In what follows we analyse three different scenarios which are based on figures and calculations from two reports written for the European Commission; the Impact Assessment report of the European Commission<sup>1</sup> and an earlier Joint Research Centre (JRC) report.<sup>2</sup> The scenarios seek to examine the ability of the DGS to cope with banking failures of various sizes, using variables that relate to different funding methods.

### **2.1 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. Six EU Member States finance their DGS on an ex-post basis, meaning that they relevant DGS are empty and hold no assets. This 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.

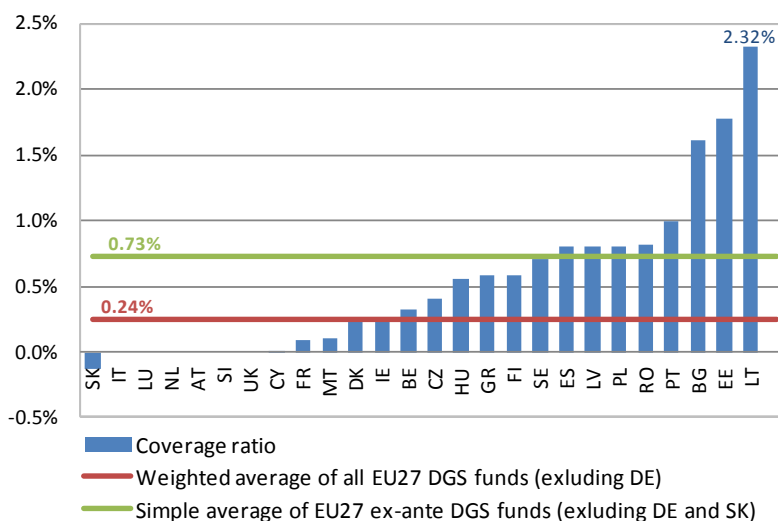
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<sup>1</sup> Impact Assessment report ([http://ec.europa.eu/internal\\_market/bank/docs/guarantee/20100712\\_ia\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/guarantee/20100712_ia_en.pdf)).

<sup>2</sup> JRC Report under Article 12 of Directive 94/19/EC as amended by Directive 2009/14/EC ([http://ec.europa.eu/internal\\_market/bank/docs/guarantee/jrc-rep\\_en.pdf](http://ec.europa.eu/internal_market/bank/docs/guarantee/jrc-rep_en.pdf)). The Directive 2009/14/EC on Deposit Guarantee Schemes (DGS), adopted in spring 2009 in response to the financial turmoil, requires the European Commission (EC) to submit to the European Parliament and the Council a report analysing a number of issues related to DGS. The EC Directorate for Internal Market and Services asked the Joint Research Centre (JRC) to set the bases for the preparation of this report. As a first step, in March 2009, the JRC conducted a survey among DGS across the 27 countries of the European Union (EU) and then used collected data to analyse how DGS operate and assessed the impact of changing existing DGS regulation through different hypothetical scenarios<sup>1</sup>.

Figure 3 shows the ratio between the assets held by the DGS and eligible deposits within the EU. As can be seen, the ratio ranges from 0 in the case of the ex-post financing countries to 2.32% in the case of Lithuania. The horizontal lines drawn represent the calculation of two types of averages; a simple average of all ex-ante DGS (0.73%), and a weighted average which takes into consideration the different sizes of DGS (both ex-ante and ex-post) and amount of eligible deposits in each Member State (0.24%).

*Figure 3: Coverage ratio of all (ex-ante and ex-post) EU DGSs in 2007.*



*Source: JRC report.*

According to the two above mentioned EU Commission reports, these DGS only held €17 billion<sup>3</sup> in funds while eligible deposits in the EU amounted to €9,272 billion. The DGSs thus have a weighted average coverage ratio of only 0.24%.<sup>4</sup> As one EU Commission report states<sup>5</sup>: “ex-ante funds alone may not be sufficient to pay out depositors”.

## **2.2 Scenario 2: The ability of a DGS to cope with immediate crisis by raising loans and using own assets**

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

<sup>3</sup> This number does not include information from the German DGSs as they did not supply information about their size.

<sup>4</sup> Excluding Germany.

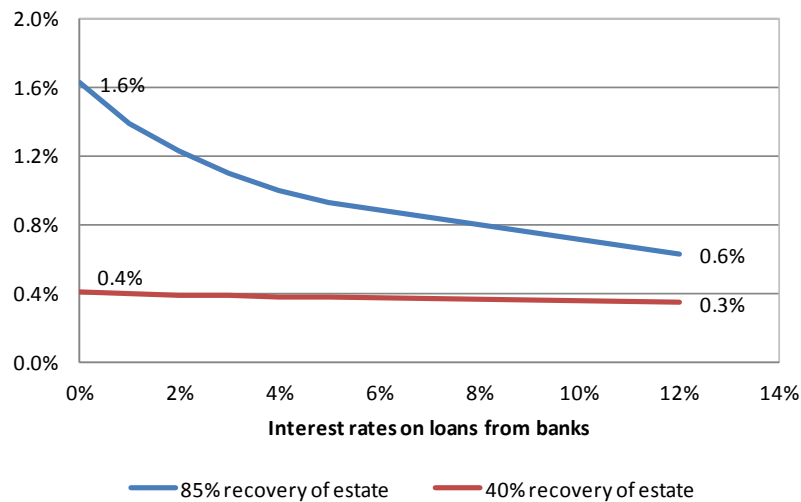
<sup>5</sup> Impact Assessment report, page 20-21.

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. The recovery of the failed banks' estates is assumed to be spread equally over a period of five years.

It is further assumed that after reimbursing the deposits, (1) the DGS will then 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.

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.

**Figure 4:** *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. (The assets of failed banks as % of total bank assets.)*



Source: IoER.

### **2.3 Scenario 3: The ability of remaining banks to help the DGS with additional contributions in case of immediate crisis**

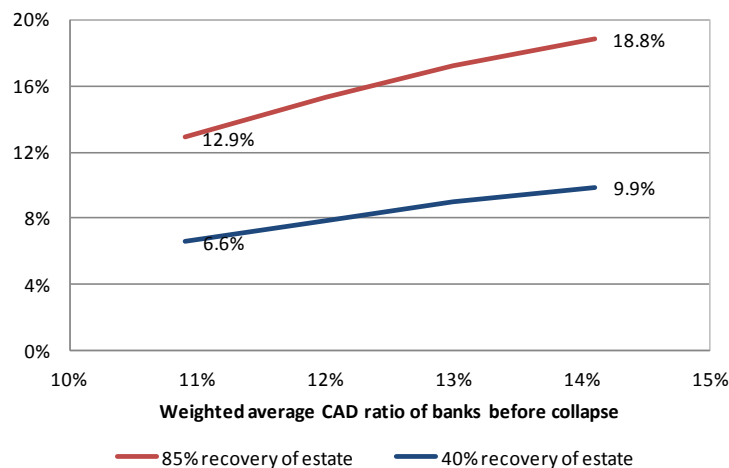
This scenario investigates the situation where the immediate bank failure is larger than the DGS can cope with by bearing all costs themselves i.e. a collapse larger than the 0.4-1.6%

according to Scenario 2. The additional costs must therefore in this case be borne by the banks themselves. Thus, here we try to analyse the maximum additional failure the bank system could deal with without the remaining banks going technically bankrupt. We calculate the size of this bank failure by lowering their equity and taking the CAD ratio<sup>6</sup> down to the regulatory minimum of 8%. It is assumed that before the banking crisis the typical CAD ratio is between 11-14% and the average equity ratio 4%<sup>7</sup>. Further, the banks are assumed to lend the DGS<sup>8</sup> to reimburse depositors and that the loan is immediately adjusted to its expected value<sup>9</sup> on the banks' balance sheets. 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 recovery of the failed banks' estates. This number should then be added to the numbers from Scenario 2 to get the total ability of the system to withstand financial crisis.

**Figure 5: 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%. (The assets of failed banks as % of total bank assets.)**



<sup>6</sup> 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.

<sup>7</sup> The equity ratio has been relatively stable at 4% over the last decade. See: IMF: Global Financial Stability Report, Statistical Appendix, September 2005 (Table 9 p. 178), <http://www.imf.org/external/pubs/ft/gfsr/2005/02/> and Global Financial Stability Report October 2010, (Table 9 p. 26) <http://www.imf.org/external/pubs/ft/gfsr/2010/02/>

<sup>8</sup> 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

<sup>9</sup> 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.



Source: IMF, IoES.

## 2.4 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.

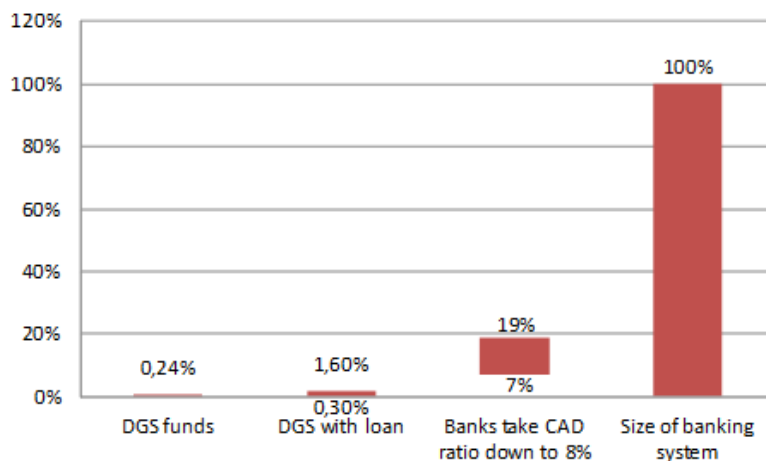
The DGS themselves have resources to cope with a 0.24% collapse. If the recovery of the estate is also taken into consideration their ability goes up to max 1.6% and even if the banks chip in all their "spare" equity, the ability of the system is below 20%.

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% 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 (2010)<sup>10</sup> 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 effect was clearly illustrated rippling effects the collapse of Lehman Brothers had on the world financial sector.

**Figure 6:** 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%.  
(The assets of failed banks as % of total bank assets.)



Source: IoES.

<sup>10</sup>De Lisa, Zedda, Vallascas, Campolongo, Marchesi, "Modelling Deposit Insurance Scheme Losses in a Basel 2 Framework", 2010. <http://www.springerlink.com/content/v5331171211k423m/fulltext.pdf>

## 3 The Icelandic DGS in comparison

### 3.1 Two scenarios

In this section information about two scenarios related to the Icelandic DGS (henceforth called “TIF”) 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.

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.

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.

### 3.2 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<sup>11</sup> and thus shows how much of the eligible deposits the DGS can repay in case of bank failure.

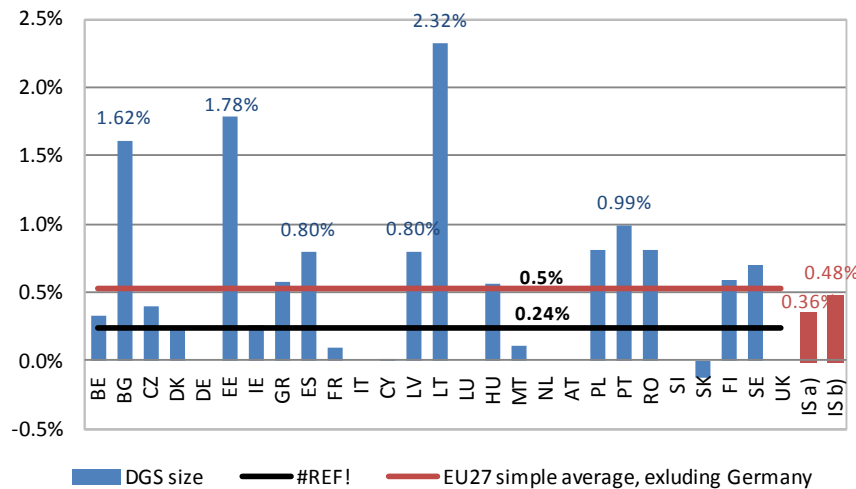
Figure 7 shows the coverage ratio in Member States and Iceland in 2007 using the two measures discussed above for Iceland. The two horizontal lines show the simple average ratio of all EU countries (0.5%) and a weighted average (0.24%). In 2007, TIF had a coverage ratio of 0.4%, just below the 0.5% simple average of all EU Member States (both ex-ante and ex-post).<sup>12</sup> 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.

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<sup>11</sup> = DGS Funds / Eligible deposits.

<sup>12</sup> 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.

Figure 7: Ratio of funds of the DGS to eligible deposits (coverage ratio) in the EU (2007) and Iceland.



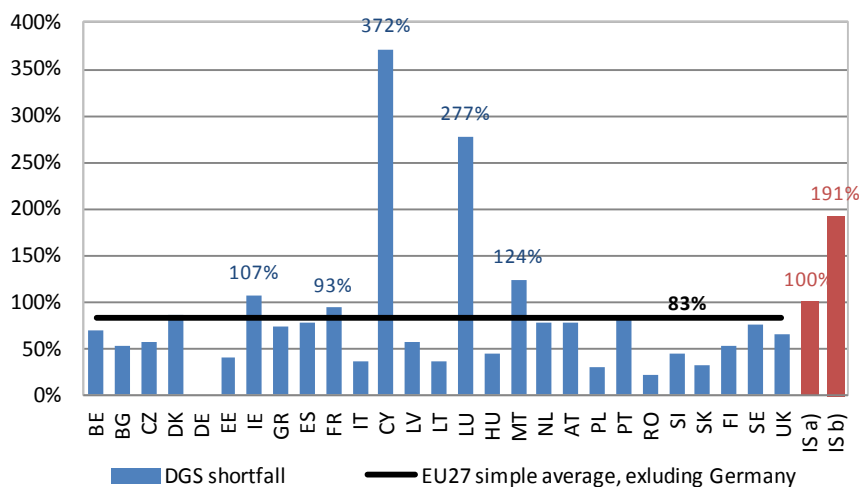
Source: JRC report, European banking Federation, TIF and IoES.

### 3.3 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.<sup>13</sup> 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 effect on government debt is investigated in Section 3.4 and the shock on a per capita basis is analysed in Section 3.5. The shock due to a DGS shortfall in 2007 on Iceland would amount to 100% of GDP at the end of 2007, roughly the EU average of 85% (horizontal line in Figure 8) but still only one fourth of what the shock would have been in Cyprus and roughly 1/3 of the shock Luxembourg would encounter. Thus Iceland's DGS shortfall as a percentage of GDP was slightly above EU average but far from being the largest within the EU.

<sup>13</sup> We continue using eligible deposit as a base as it is used in both the JRC report and the IA report.

**Figure 8: DGS shortfall as a percentage of GDP in the EU (2007) and Iceland.**

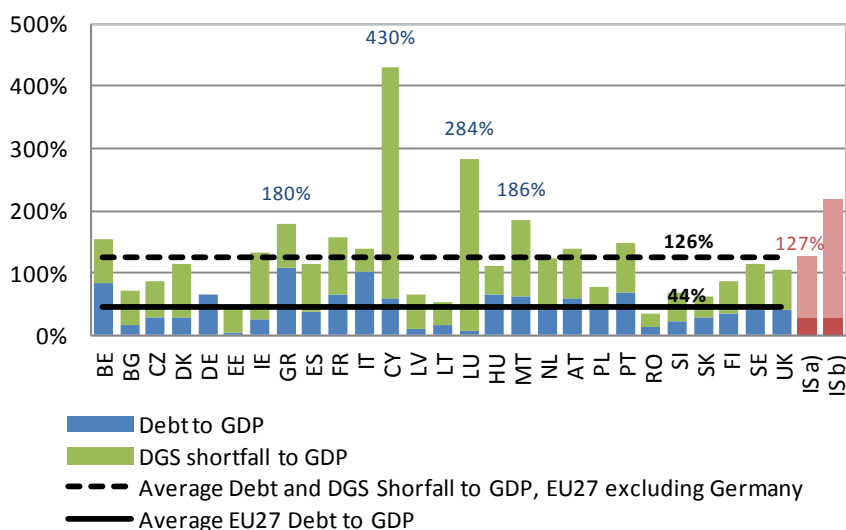


Source: JRC report, European Banking Federation, TIF and IoES.

### 3.4 Comparison 3: DGS shortfall and government debt

The simple average general government gross debt of the EU-27 countries was 44% (lower horizontal line in Figure 9) 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, be almost double 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 9).

**Figure 9: The effect of DGS shortfall on general government gross debt in the EU (2007) and Iceland.**



Source: JRC report, TIF, EBF.

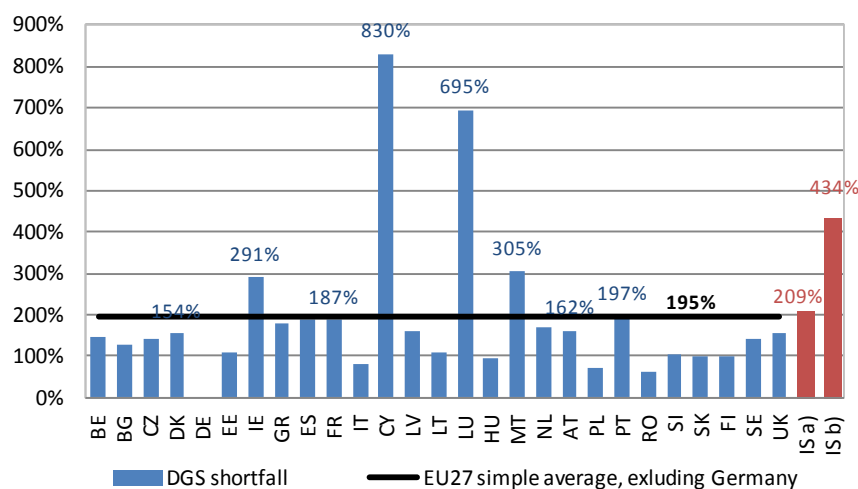
Adding the DGS shortfall to the general government debt raises the debt to 127% of GDP for Iceland in 2007. This is close to what the post-crisis average debt in EU Member States would be, but only one-third of what government debt would be in Cyprus and half of what the debt would amount to in Luxembourg. 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.

### 3.5 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 10) in the EU, but was 209% in the case of Iceland.

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.

Figure 10: *DGS shortfall as a percentage of Total general government revenue in the EU (2007) and Iceland.*



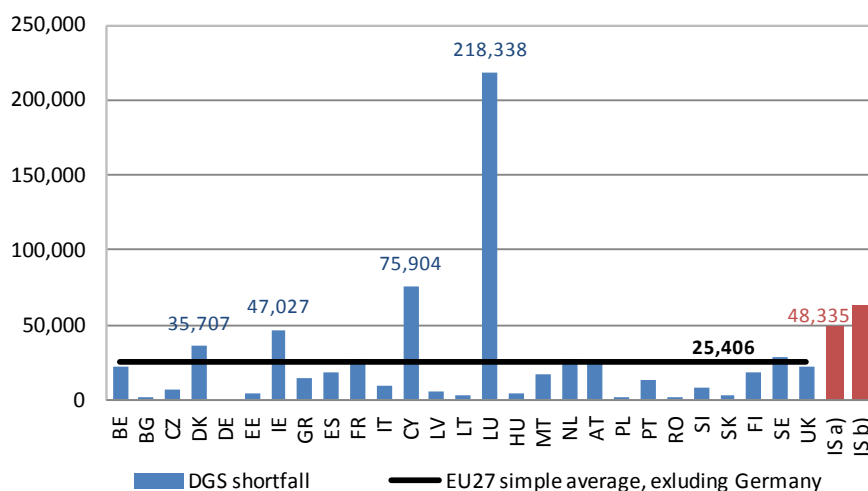
Source: JRC report, TIF, EBF, CBI.

### 3.6 Comparison 5: DGS shortfall per capita

In Figure 11, 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.<sup>14</sup> 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.

*Figure 11: DGS shortfall per capita in the EU and Iceland, € 2007.*



Source: Source: JRC report, TIF, EBF, CBI.

### 3.7 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 but 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.

<sup>14</sup> It should be noted that the Dutch DGS is funded ex-post.