

## Implicit Guarantees for Bank Debt: Where Do We Stand?

by

Sebastian Schich and Sofia Lindh\*

*The global financial crisis and the policy response to it have placed a sharp spotlight on the issue of implicit guarantees for bank debt. This report discusses the incidence of implicit government guarantees for bank debt, their determinants, and estimates of their value. It shows i) that the extent of implicit guarantees differs from one banking sector to another and, within a given banking sector, from one bank to another, ii) that implicit guarantees are higher the lower the bank's stand-alone creditworthiness, the higher the creditworthiness of its sovereign and the relatively bigger the bank in its domestic context, iii) that the incidence of implicit guarantees increased since the beginning of the financial crisis, but has decreased more recently, iv) that this recent decrease can be explained to a large extent by declining sovereign strength and hence a reduced capacity of on the part of many sovereigns to provide for such guarantees, but is also consistent with ongoing efforts in many OECD countries to make bank failure resolution regimes and practices more effective, and v) that implicit guarantees persist. Implicit guarantees imply an undesirably close link between the value of bank and sovereign debt. They also imply a significant funding cost advantages for the banks that benefit from them, thus implying competitive distortions and an invitation to beneficiary banks to use them and, perhaps, take on too much risk.*

*JEL Classification: E44, G13, G21, G28, H81.*

*Keywords: financial guarantees, implicit guarantees, risky guarantors, bank funding, systemically important banks, banking and sovereign debt interconnections.*

---

\* Sebastian Schich and Sofia Lindh are Principal Administrator in the Directorate for Financial and Enterprise Affairs of the OECD and Economist at the Sveriges Riksbank (on secondment at the OECD while this report was prepared), respectively. The current report is based on a presentation given at the meeting of the OECD's Committee on Financial Markets on 27 April 2012, and it takes into account the discussions and comments made at that meeting and those obtained subsequently in writing. It has also benefitted from comments received by the first author in presenting the work at meetings of the Analytical Group on Vulnerabilities of the Financial Stability Board in February 2012, the European Federation of Deposit Insurance/Fondo Interbancario di Tutela dei Depositi seminar "Sovereign risk, bank stability and ongoing regulatory regimes" in February 2012, and the Wilton Park/Deutsche Bundesbank conference "Financial regulation in the European Union" in March 2012. The article was released in June 2012. It is published on the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of the Organisation or of the governments of its member countries.

## I. Motivation

The global financial crisis has put a sharp spotlight on implicit guarantees, as the policy measures taken in response to it meant that governments together with central banks effectively provided the function of the guarantor of last resort for financial institutions. In the process, existing guarantees for financial liabilities were expanded and new ones introduced, thus effectively transforming implicit guarantees into explicit ones. The OECD's Committee on Financial Markets argued a few years ago that implicit guarantees might be quite difficult to remove and that the recent policy response to the financial crisis has made the question whether they can ever be fully withdrawn under all circumstances particularly relevant (Schich, 2009). While many of the emergency guarantees have technically been withdrawn, market participants may nonetheless be left with the impression that the guarantees will be reinstated whenever circumstances make it compelling for policymakers to use them again.

The implicit guarantees for the debt of banks considered by policymakers to be either too big or too interconnected or too important for other reasons to be allowed to fail (TBTF) have come into sharp focus recently precisely in this context. That TBTF status suggests to many participants the existence of an implicit guarantee from the government and other policymakers. For any debtor deemed TBTF, the perception results in an increase in the value of its debt relative to non-TBTF institutions. In effect, beneficiary institutions gain access to cheap financing relative to the risk they take, even though the guarantee itself is "implicit". That is, public authorities do not have any explicit, ex ante, commitment to provide such support.

This report is part of work by the Committee on Financial Markets on implicit guarantees for bank debt. The empirical section uses a measure of implicit guarantees derived from credit rating agency assessments, in particular from the difference between a bank's all-in credit rating (that reflects assumptions about potential external support for the debtor) and its stand-alone credit rating (that abstracts from such support).<sup>1</sup> The report shows that this measure of the incidence of implicit guarantees for bank debt increased, on average for a sample of 123 large banks from 17 European countries, after the beginning of the financial crisis thus providing the beneficiary banks with a sizable funding cost advantage. More recently, the measure has declined, which preliminary results show can be explained in large part by a decline in sovereign strength.

## II. The effect of implicit guarantees

### 1. *Implicit guarantees for banks are considered undesirable*

The key element of the policy response to the global financial crisis was the provision in more explicit form of the government-supported guarantor-of-last-resort function. This response has entrenched the perception that financial institutions benefit from an implicit guarantee. It has also led to a greater determination of policymakers to counter this perception, as reflected in some recent policy statements. For example, a joint letter by European heads of state to President Van Rompuy and President Barroso from 20.2.2012 states: "*Implicit guarantees to always rescue banks, which distort the single market, should be reduced. Banks, not taxpayers, should be responsible for bearing the costs of the risks they take*".

## 2. *Implicit guarantees raise a number of policy issues*

Among the issues posed by implicit guarantees are the following:

- *Financial stability:* There are generally no charges for implicit guarantees, at least not directly. Underpriced (or free) guarantees are an invitation to use them and, perhaps, take on more risk.<sup>2</sup>
- *Competition:* Some banks may benefit from more valuable guarantees than others (e.g. „large“ versus „small“ banks; banks with strong versus banks with weak sovereigns, etc.).
- *Taxation:* Implicit guarantees imply an ongoing transfer of resources from taxpayers to banks; taxes may be needed to recuperate the transfers.
- *Budgeting transparency and accountability:* As a general rule, implicit bank debt guarantees are not expressly recognised in the fiscal budget. It is hence difficult to hold governments accountable for them.

## 3. *Undesirable links between the value of bank and sovereign debt*

Implicit guarantees also imply an undesirably close link between the value of bank and sovereign debt, including potential negative feedback effects from the value of sovereign debt to the value of banking debt, and vice versa (see Figure 1 for a stylised overview). The adverse effects that run from bank to sovereign debt quality include the following:

- An over-indebted banking sector under deleveraging pressures is detrimental to domestic real activity growth and tax income, making it harder for the sovereign to service its own debt.
- Banks are significant buyers of government debt and widespread failures of banks would imply shrinkage in the investor base. That said, given risk-based capital charges, banks under capital pressure would normally be expected to increase their demand for domestic sovereign bonds, which have a zero risk weight, to the detriment of higher risk weighted assets.
- Bank support measures might require additional fiscal outlays. Explicit or implicit guarantees for bank debt increase actual or contingent sovereign liabilities, thus increasing the amount of actual or potential sovereign debt.<sup>3</sup>

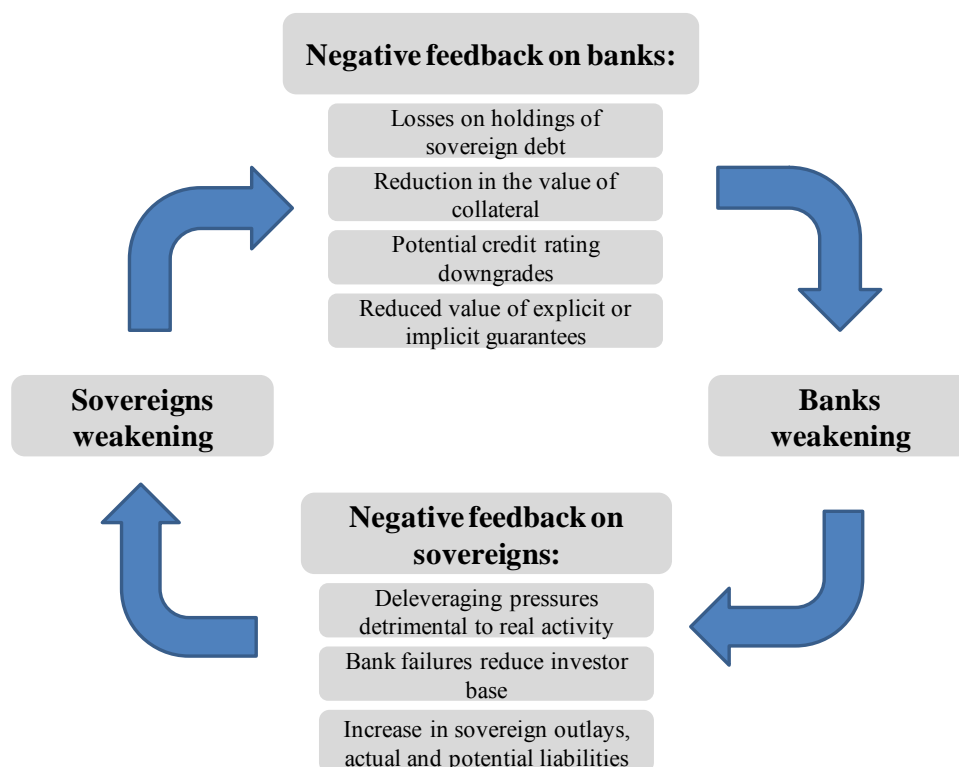
The adverse effects that run from sovereign to bank debt quality include the following:

- As banks are significant buyers of government debt, they are likely to experience mark-to-market losses on their holdings of sovereign debt when the price of the latter declines, which as the crisis indicates can be quite substantial.
- A decline in the market value of banks' holdings of sovereign debt corresponds to a reduction in the value of the debt as collateral for raising wholesale funding in the market as well as, in principle, central bank funding. Central banks apply valuation haircuts to debt securities offered as collateral, and there is a limit to which central banks can loosen their requirements regarding eligible collateral.

- Sovereign credit ratings are typically the ceiling for ratings on private domestic debt; hence a downgrade of the former may cause a „quasi mechanical“ downward pressure on the latter. There can be exceptions. For example, during the recent crisis episode some Greek, Portuguese, Spanish and Italian banks have held higher all-in credit ratings from Moody’s than the sovereign.
- A deteriorating sovereign debt rating implies a reduced value of the explicit and implicit guarantees from the sovereign for bank debt. The effect on the latter can have implications for the credit rating in addition to the effects mentioned in the previous bullet point.

Several of these linkages became apparent in the recent European sovereign debt crisis. In the case of sovereigns with weak fiscal positions and deteriorating debt servicing capacity, pressures tended to be amplified through the adverse feedback loops running from banking sectors to sovereigns and vice versa, operating through funding costs.<sup>4</sup> By contrast, in banking sectors where the sovereign was considered strong, *e.g.* in Germany and in Sweden, similar pressures arising from adverse feedback loops involving banking and sovereign debt seem to have been absent. Before one can draw firmer conclusions, however, the linkages between the value of bank debt and the strength of the sovereign need to be better understood. This requires one to have a measure of the incidence of implicit guarantees.

**Figure 1. Adverse feedback effects from sovereign to bank debt values and vice versa**



Source: Secretariat assessment.

### III. Measuring implicit guarantees

#### 1. *Credit ratings as an indirect measure of the value of implicit guarantees*

To measure the incidence of implicit guarantees,<sup>5</sup> this report follows the approach adopted early on by Rime (2005) and more recently in CGFS (2011), Packer and Tarashev (2011), and Estrella and Schich (2011) of using credit rating uplifts to proxy the extent of implicit guarantees to banks.

The approach consists of exploiting the assessments by rating agencies of the extent of external support available for bank debt. While rating agencies may not always prove to be correct in their assessments, market participants do take them into account when valuing bank debt, as reflected in the significant correlation between these assessments and issuers' debt funding costs (e.g. Morgan and Stiroh, 2005). That relationship between credit ratings and funding costs is not a stable one; rather, it changes over time. For example, during 2009 compared to other recent years, the difference in ratings between higher-rated and lower-rated banks mattered most for the debt funding costs (Noss and Sowerbutts, 2012).

Credit rating assessments also affect funding in other ways. For example, credit ratings are mentioned explicitly in wholesale and central bank funding operations to define collateral requirements; thus, they affect funding costs more generally, and not only through their effect on market yield spreads of debt issues. There is, however, a concerted effort on the part of policy makers to de-emphasise the role of such external credit ratings, and especially the mechanical reliance on them by market participants, so their role might well change in the future.

#### 2. *An alternative is to use observed yield spreads*

An alternative to ratings is to use observed market prices of bank debt. In particular, estimates of the effect of implicit guarantees can be obtained from observations of the yield spread differentials for debt securities that have similar characteristics but are issued by issuers that differ only in the extent to which they benefit from an implicit guarantee. This alternative has the advantage that it measures more *directly* the effect of the implicit guarantee on funding costs, but it also has disadvantages.

- First, it can be quite challenging to identify securities that are comparable regarding their basic characteristics, given that important features (such as especially the term to maturity, coupon and other features such as currency) tend to differ from one bond to another.
- Second, a general issue when comparing yield spreads across different issues is that they are affected not only by credit risk perceptions but also by other factors such as liquidity premiums. Separating out these factors is not straightforward. By contrast, the credit risk assessments by credit rating agencies are meant to abstract from these factors and focus on credit risks only. Of course, the extent to which they succeed in this separation might be questioned.
- Third, not all banks issue bonds in the same currency; thus issues might differ in terms of currency risk premiums, for which it is not easy to control. Our interest lies however in a cross-border comparison of the extent of implicit guarantees for a number of debt issuers in different countries that do not all share the same currency. In those cases it is difficult to calculate the yield spreads for banks.

- Fourth, identifying a credit risk spread from observed market data becomes more difficult when there is no appropriate reference security that is considered credit-risk-free. As the existence of sovereign credit risk is increasingly being appreciated, sovereign debt in many cases does not satisfy the condition of a (credit) risk-free alternative anymore.

Credit rating agency assessments of credit risks, at least in principle, overcome these various problems. They provide a rather homogeneous measure of perceived credit risk, as the ratings are conceptually similar for banks wherever they are located and issue their debt. Given that our interest in the present study lies in a comparison across borders of the incidence of implicit guarantees, the advantages of this measure outweighs its disadvantages.

### 3. *All-in versus stand-alone credit rating*

For some time now, credit rating agencies have rated banks by explicitly factoring in an estimate of the external support that the bank under consideration receives, either from its parent or from public authorities. In fact, the three largest rating agencies provide two types of ratings for a bank:

- An all-in credit rating (AICR) that factors in the possibility and likelihood of external support that the bank under consideration receives when needed from its parent, a cooperative or public authorities;<sup>6</sup> and
- a “stand-alone credit rating” (SACR) that abstracts from such support.

The difference between the two types of ratings is referred to here as rating “uplift” and it provides an estimate of the effect of implicit guarantees. The assumed support from the government is by far the most important component and this difference has commonly come to be used as an empirical measure of the extent of explicit or implicit support from the government (e.g. the references cited at the beginning of this section). That proxy captures other types of support as well, such as parental, cooperative and local and regional government support.<sup>7</sup>

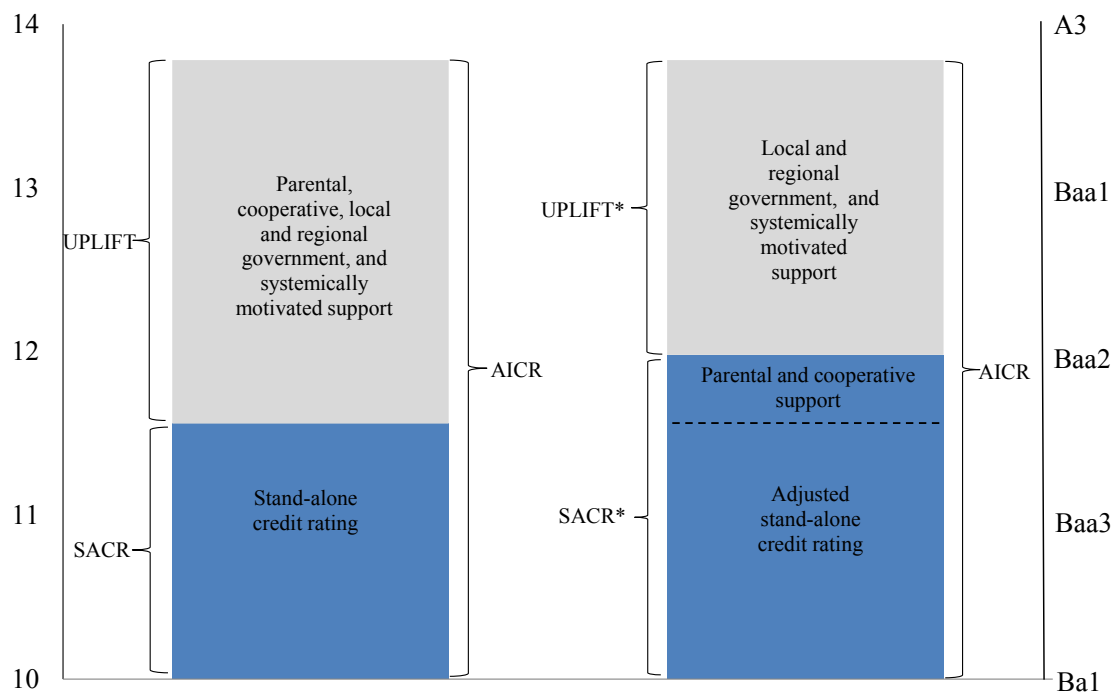
The methodologies and data availability differs among the three major rating agencies. Recently, the credit rating agencies have intensified their efforts to quantify the systemic support element of assumed external support. In the process, some have made publicly available more precise estimates of external support associated with systemic concerns, in some cases identifying separately the assumed support due from parental and cooperative support on the one hand versus local, and regional or national government support on the other. In the remainder of this report, we rely mostly on two measures based on data from Moody’s, which recently provides that distinction and also allows us to construct consistent time series for individual banks.<sup>8</sup> We consider in particular the following two measures (see also Figure 2):

- The difference between AICR and SACR is referred to as “UPLIFT”. It reflects various types of external support, including parental and cooperative support, accounting for about 0.4 notches out of a total uplift of 2.2 notches on average for our sample as of early 2012. This measure has been used in some previous studies (e.g. Haldane, 2010; Sveriges Riksbank, 2011) and it backs the discussions in Section 4 on the historical development of external support assumptions.

- Recently, Moody’s has started to report an adjusted SACR (SACR\*), which already factors in the effect of parental and cooperative support. This allows us to calculate an adjusted uplift (“UPLIFT\*”) that abstracts from parental and cooperative support and reflects external support from public authorities only; that is regional and local government support and systemic support. UPLIFT\* amounts to 1.8 notches as compared to 2.2 notches for UPLIFT (Figure 2). This measure is used here for the estimates of funding cost advantages discussed in section 4 and the analysis of the determinants of uplift in section 5.

The discussions by the OECD’s Committee on Financial Markets revealed broad support for the approach of measuring the effect of implicit guarantees using credit rating agency assessments, although it was also suggested that measurement of this effect directly from market prices provides a useful reference, especially when comparing different entities within one market. Some caution was however expressed by some CMF delegates vis-à-vis the use of rating agency data in calibrating the policy response to the issue of implicit bank debt guarantees, given that policymakers currently intend to reduce the (mechanical) reliance of the regulatory framework on credit rating assessments.

**Figure 2. Alternatives measures of external support considered here**



Notes: The data are averages for 123 large European banks as of March 2012. The selected banks are the largest banks from 17 European countries for which data both on AICR and SACR were available from the rating agency Moody’s. The left-hand side scale shows the numerical equivalents of the rating categories shown on the right-hand side scale.

Sources: OECD Secretariat estimates based on Bloomberg and Moody’s.

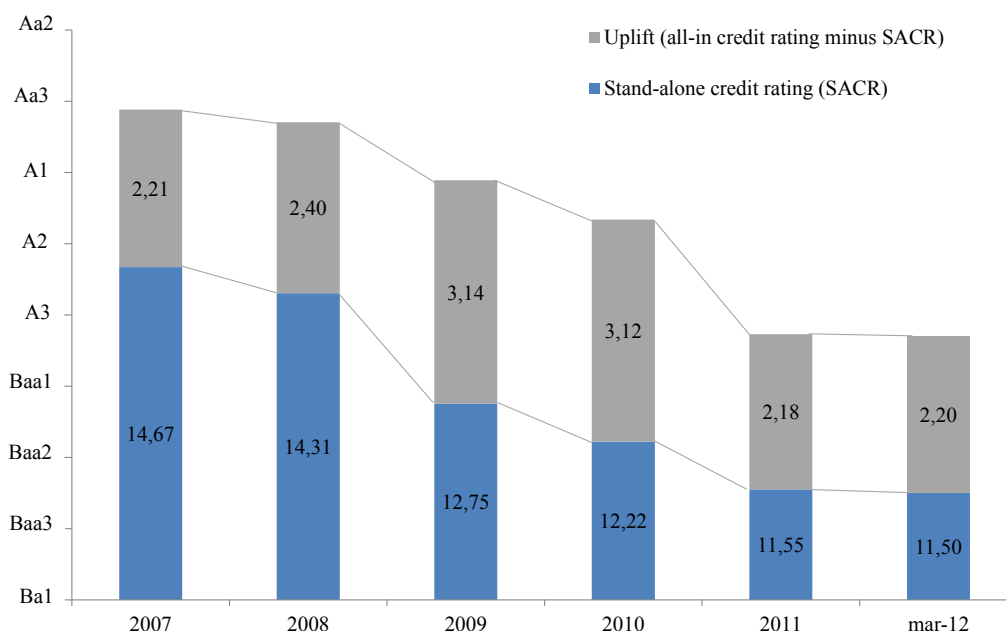
## IV. Incidence of implicit guarantees for bank debt in Europe

### 1. Variations over time and across countries where banks are headquartered

Judged by the measure of implicit guarantees considered here, the incidence of implicit guarantees for bank debt changes noticeably over time. In particular, our measure (calculated for a fixed sample of 118 large European banks) suggests that the incidence of implicit guarantees increased in the wake of the global financial crisis (Figure 3).<sup>9</sup> More recently, however, the guarantees have decreased again, although they remain on average at a similar level as at the beginning of the global financial crisis, despite the recent direct and indirect efforts to reduce the perception that some banks benefit from government support due to their importance for the financial system. Instead, implicit guarantees are persistent; they are actually not significantly lower in early 2012 than they were prior to the global financial crisis.

**Figure 3. Changes in stand-alone and all-in ratings of large international banks**

Average stand-alone credit ratings and rating uplifts, as well as their numerical equivalents



*Notes:* Value of uplift is estimated as the difference in notches between the "all-in credit rating" (AICR) and the "stand-alone credit rating" (SACR), where rating classes are mapped into numerical values (e.g. a rating of Aaa is given a value of 20, Aa2 = 19, Aa3 = 18, etc; see also Moody's, 2011). One notch is the difference between subsequent rating categories. The sample consists of 118 large banks for which time series for both ratings that are rated by Moody's between 2007 and 2012.

*Sources:* Bloomberg, Moody's and OECD Secretariat estimates.

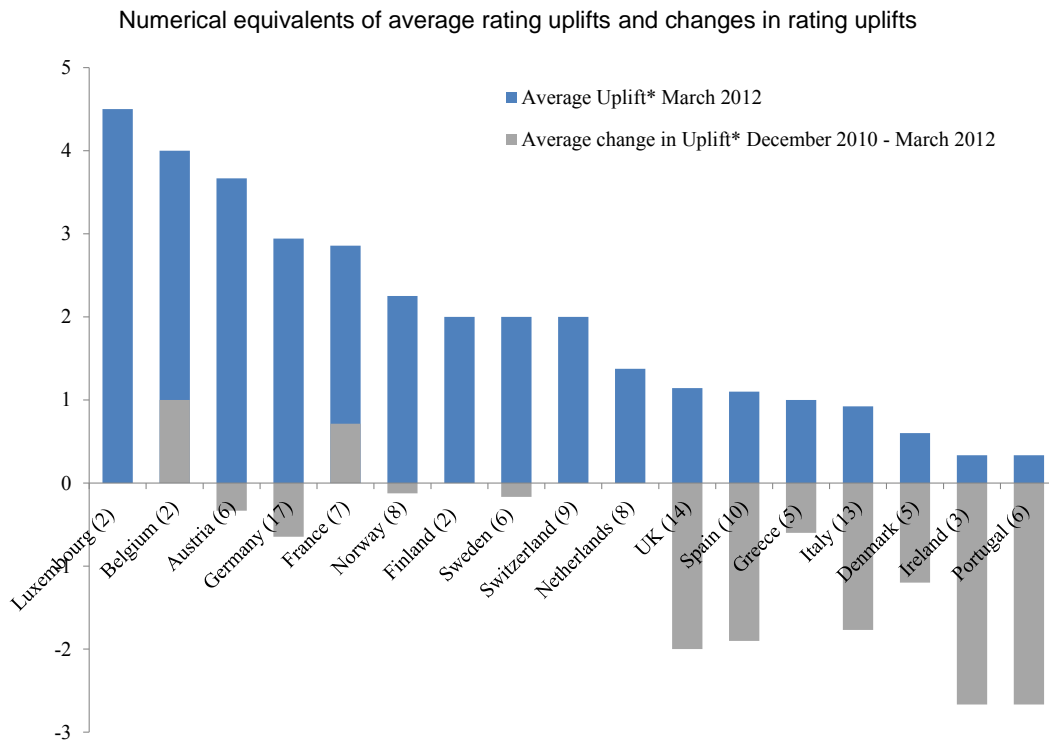
These average developments mask considerable differences across the countries in which the sample banks are currently headquartered. The levels of average support differ from one country to another (Figure 4; the number of banks for which the average is calculated is given in parentheses). A remarkable observation is that implicit guarantees are positive on average in all countries considered here. In fact, 90 out of the 123 banks of our sample benefit from a positive uplift, as of early 2012. Thus, the number of banks benefitting from an implicit guarantee largely exceeds the number of banks identified in



November 2011 by the Financial Stability Board in its initial list of banks that are systemically important on a global basis, which is 29.

Recent changes in implicit guarantees also differ from one country to another. They were particularly pronounced in some of the countries where the sovereign has recently experienced a decline in its own credit assessment, which suggests a role for the strength of the guarantor in explaining the incidence of implicit guarantees.

**Figure 4. Changes in uplift of large international banks in selected European countries**



*Notes:* Average uplift, calculated as the difference in notches between “all-in credit rating” (AICR) and the *adjusted* “stand-alone credit rating” (SACR\*), which already factors in parental and co-operative support; hence the difference reflects regional government and systemic support only. Sample consists of 123 large European banks. Number of banks headquartered in countries shown in parentheses.

*Sources:* Bloomberg, Moody's and OECD Secretariat estimates.

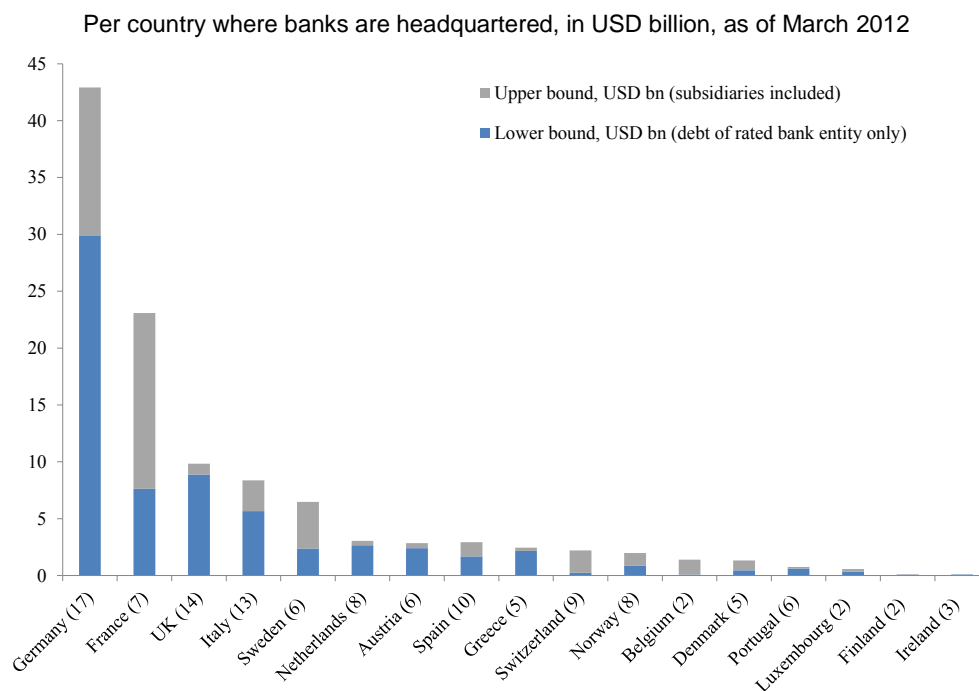
## 2. Potential effect on funding costs

Despite the most recent declines in the incidence of implicit guarantees, the effect of implicit guarantees remains nonetheless substantial by some measure. Figures 5 and 6 each show a measure of the estimated yearly reduction in funding costs due to the existence of implicit guarantees, calculated as of spring 2012.<sup>10</sup> Figure 5 provides an estimate of funding cost advantages in early 2012 in USD billion, while Figure 6 relates that estimate in USD to the GDP of the country where the banks in question are headquartered. The estimates show that there is substantial variation from one country to another. These differences reflect the differences in the incidence of credit rating uplifts in the countries where the banks are headquartered and the amounts of debt outstanding of each bank as well as the number of banks headquartered in each of the countries shown.

These estimates should be taken with a pinch of salt as they vary considerably depending on the choice of parameters. Such parameters include in particular the period

(e.g. choice of specific date or period average), the number and type of banks (here largest banks for which data on both types of ratings was available), the debt measure, the yield curve estimate, and the rating agency.

**Figure 5. Estimated yearly reduction in funding costs due to implicit guarantee**



Notes: Number of banks in parentheses. Estimated implied yearly reduction in cost of outstanding debt in billion USD, per country in which banks are headquartered (with the exception of Dexia, in which case Dexia Credit Local is allocated to France and Dexia BIL to Luxembourg, even though the Dexia group is headquartered in Belgium. Note that these estimates do not necessarily imply equivalent local taxpayer burden. Using adjusted stand-alone credit rating. Total number of banks is 123.

Sources: OECD Secretariat estimates, Bloomberg, Moody's, Bankscope, bank specific annual reports and OECD Secretariat estimates.

To see how the choice of parameters matter, consider two earlier studies that also relied on data from Moody's, with one study suggesting higher and the other one lower funding cost advantages, compared to the present report.<sup>11</sup>

Haldane (2010) estimates a funding cost reduction of more than GBP 100 billion for 2009 for 13 banks in the UK alone, while our estimates suggest a funding costs advantage for 14 UK banks of just under USD 10 billion for 2012. The difference between the estimates seems to reflect in particular the choice of estimation period and perhaps also the choice of debt measure,<sup>12</sup> rather than the estimate of the incidence of implicit guarantee (see Appendix Figure A.4 for a comparison). Note that Haldane estimates a funding cost reduction for UK banks in 2007 to be just GBP 11 billion (about USD 17 billion at current exchange rates).

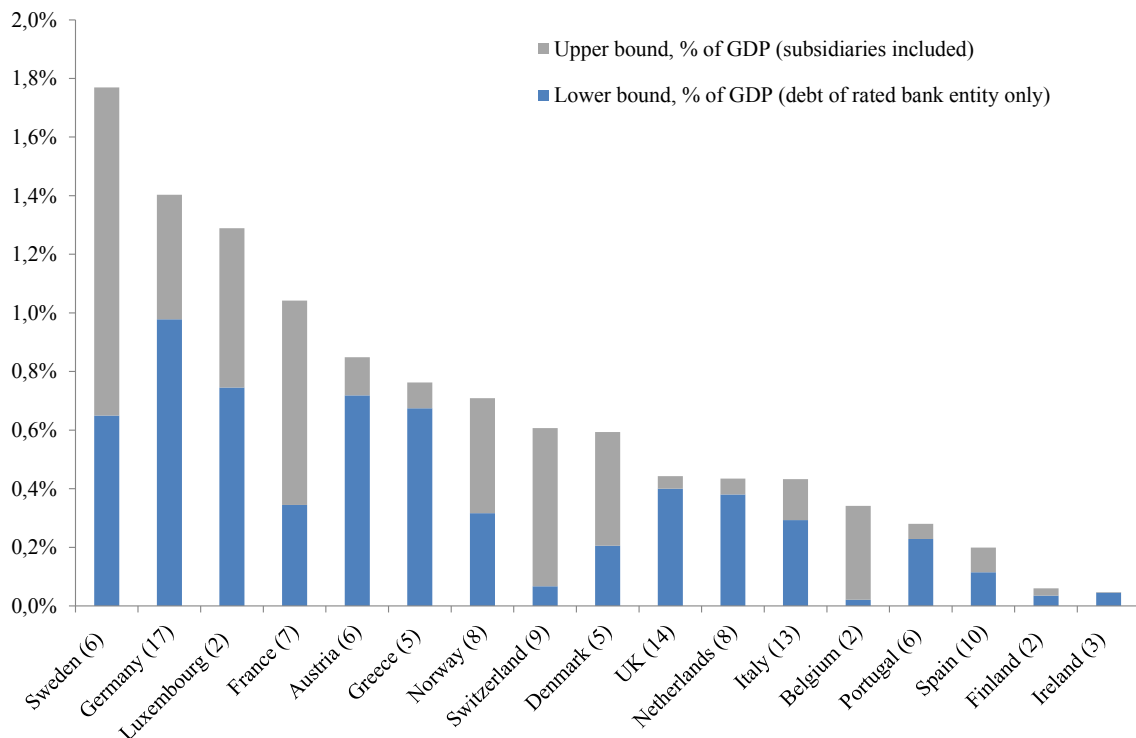
The Swedish central bank, Sveriges Riksbank (2011), estimates that the average yearly reduction in funding costs for the four largest Swedish banks amounts to SEK 30 billion over the period from 2002 to 2010, corresponding to an annual USD 4.5 billion using current exchange rates. Our estimate suggests a value of USD 6.5 billion, based on data for early 2012. Again, the choice of the observation period seems to explain a considerable part of the divergence: The average uplift for these four Swedish banks under consideration was

1.13 notches between 2002 and 2010, while the uplift amounted to 3 notches on average for the four banks as of early 2012.

Thus, the results of various studies can be reconciled (at least to a large extent) and the differences in results explained in particular by the observation periods.<sup>13</sup> The point to note is that, differences aside, various studies suggest that the reduction in funding costs can be quite substantial.

**Figure 6. Estimated yearly reduction in funding costs due to implicit guarantee**

In per cent of GDP of country where banks are headquartered, as of March 2012



Notes: Estimated implied yearly reduction in cost of outstanding debt as per cent of GDP of country where banks are headquartered. This does not necessarily imply equivalent local taxpayer burden. One exception is Dexia where Dexia Credit Local is shown up under France, and Dexia BIL is shown up under Luxembourg. Using adjusted stand-alone credit rating. Number of banks in parenthesis, a total number of 123 large banks that are rated by Moody's.<sup>14</sup>

Sources: OECD Secretariat estimates, Bloomberg, Moody's, Bankscope, bank specific annual reports, and OECD.

## V. Selected determinants of implicit guarantees

### 1. A sharp focus on the strength of the guarantor

A guarantee from a weak guarantor is less valuable than one from a strong guarantor, other things equal. For example, contingent claims analysis shows that the value of guaranteed debt decreases with the strength of the debtor and increases with the strength of the guarantor (Estrella and Schich, 2011). Conceptually, a bank fails because it is insolvent and illiquid and because the government (and/or lender of last resort) allows it to fail. Hence, the guarantor's capacity and willingness to provide support for the debt of a bank matters. Most recently, the spotlight has been put squarely on the strength of the sovereign to provide for that guarantee.

In addition to the strength of the debtor and that of the guarantor, a number of other factors are likely to influence the perceived implicit guarantee for bank debt, some of which could be loosely described as being related to the willingness of public authorities to provide support for bank debt. For example, the debt-issuing bank might be considered TBTF. The bank may be too big, too interconnected or too important for the financial system as a whole for another reason, so that its failure would cause significant disruption to the wider financial system and economic activity. As a result of this status, public authorities might feel compelled to provide support for the debt of such banks. While there is no unique approach as to what makes a bank “systemically important”,<sup>15</sup> it turns out that some measure of size of the bank is either part of the set of indicators or is closely correlated with the latter. Against the background of this observation, we also include a measure of the size of a bank, here as compared to its domestic peers, as an additional determinant of the credit rating uplift, the adjusted uplift (UPLIFT\*).<sup>16</sup>

Based on the considerations described before, we would expect the effect of our size measure on the credit rating uplift to be positive. That said, the relationship may not be a simple linear one. Once large banks get too large in comparison to the sovereigns’ fiscal and economic clout, the costs of support may just become unaffordable for public authorities. An example of the latter case is Iceland (see e.g. Gudmundsson, 2011).

## **2. Results of empirical analysis of determinants of credit rating uplifts**

The results of our empirical analysis are shown in Tables 1 and 2. The analysis is based on a cross-section of data for altogether 123 large European banks from 17 countries, considering data for March 2012 and December 2010. In one exercise, we run a cross-section regression using data for March 2012, considering a country fixed-effects model to account for unobserved heterogeneity across countries. In another regression exercise, we consider the differences between December 2010 and March 2012 in all variables.<sup>17</sup> The main results are as follows.<sup>18</sup>

Looking across banks as of early 2012 (Table 1),

- Implicit guarantees are higher the weaker the bank’s own credit rating,
- Implicit guarantees are higher the better the rating of the banks’ domestic sovereign.
- Implicit guarantees are higher the larger a bank in relation to its own peers, in country which they are headquartered.

Looking at the changes since December 2010 (Table 2),

- Banks that have weakening now benefit from relatively higher implicit guarantees than previously. And banks that have strengthening now benefit from relatively lower implicit guarantee.
- Also, where sovereigns have become weaker, implicit bank guarantees have tended to decline. And, where sovereigns have become stronger, implicit guarantees have tended to increase.

The first two results listed under Table 1 and the last two results listed under Table 2 (out of the five results singled out in the list above) are consistent with the conceptual model and empirical work by Estrella and Schich (2011). They confirm the suggestion that

the identity and strength of the guarantor matters for the value of guarantees. In the present case, changes in the sovereign's credit strength explain a considerable part of the variation across countries and over time in the incidence of implicit guarantees.

Where the sovereign's creditworthiness continues to be high, the implicit guarantees for banks continue to be very substantial. An example is the support expected to be given by public authorities to the Landesbanken in Germany. That said, implicit guarantees have also persisted, even if they have declined, in banking systems where the sovereign has come under pressures of its own.

The third result (Table 1) implies that relatively larger banks tend to benefit from higher implicit guarantees. It is thus consistent with the notion that bigger banks tend to be more systemically important than smaller banks, perhaps making them too-big-to-fail.

**Table 1. Regression on credit rating uplift; least squares with country fixed effects**

Dependent variable is UPLIFT\*; in numerical equivalents; as of mid-March 2012

<i>Variable</i>		<i>Coefficient</i>	<i>Std. error</i>	<i>Probability</i>
Issuer bank stand-alone credit rating (SACR*)		-0.34***	0.05	0.00
Domestic sovereign credit rating (SCR)		0.28***	0.04	0.00
Relative size compared to other domestic banks		0.58***	0.07	0.00
R-squared	0.66	<i>Test for country fixed effects:</i>		
Adjusted R-squared	0.61	Restricted log likelihood		-195.16
		Unrestricted log likelihood		-170.32
		Likelihood ratio test		49.68***

*Notes:* The dependent variable is the individual credit rating uplift due to local and central government support only (UPLIFT\*) for a sample of 123 large European banks rated by Moody's. \*\*\*, \*\*, and \* denote significance at the 1, 5, and 10 per cent level, respectively. The ratings categories AICR (all-in credit rating; not shown here, but used to calculate UPLIFT\*), SACR\* and SCR are transformed into numerical values (i.e. Aaa equal to 20, Aa1 equal to 19, etc.). UPLIFT\* is obtained by subtracting SACR\* from AICR. A fixed effects model is used to control for unobserved heterogeneity across countries that is correlated with the independent variables; dummy variables are included for all but one country.

**Table 2. Regression on change in credit rating uplift using ordinary least squares**

Dependent variable is change of UPLIFT\*; from December 2010 to March 2012, in numerical equivalents

<i>Variable</i>		<i>Coefficient</i>	<i>Std. error</i>	<i>Probability</i>
Constant		-0.65***	0.11	0.00
Issuer bank stand-alone credit rating (SACR*)		-0.54***	0.07	0.00
Domestic sovereign credit rating (SCR)		0.37***	0.04	0.00
R-squared	0.45	Std.error of regression		1.01
Adjusted R-squared	0.44	Log likelihood		-174.52

*Notes:* Dependent variable is the change in the individual credit rating uplift (UPLIFT\*) for sample of 123 large European banks rated by Moody's. \*\*\*, \*\*, and \* denote significance at the 1, 5, and 10 per cent level, respectively. The ratings categories are transformed into numerical values in the same way as the data on stand-alone credit ratings (SACR\*) and all-in credit ratings (AICR) of banks (i.e. Aaa equal to 20, Aa1 equal to 19, etc.). UPLIFT\* is obtained by subtracting SACR\* from AICR.

### *3. The potential role of effective bank failure resolution regimes*

As part of the empirical analysis of implicit guarantees, we also examined the role of the recent changes in bank failure resolution regimes, but based on experimenting with a range of dummy variables, failed to identify a robust and statistically effect. However, preliminary results of ongoing case-study work undertaken for the Committee on Financial Markets suggests that resolution regimes can play a role in reducing the incidence of implicit guarantees. As discussed by the Committee in previous meetings, the choice of policy response to the crisis reflected the observation that appropriate failure resolution mechanisms were not available in most jurisdictions. In recognition of this observation, bank failure resolution regimes have been improved over the past few years in several countries and especially since 2010.

The increased availability of (more effective) tools to achieve an orderly unwinding of banks is helpful and reduces the need for public authorities to provide support to banks in distress that are considered too big, too interconnected or too important otherwise to fail. The progress made in this regard, especially since 2010, is indeed consistent with the decline in implicit guarantees observed since their peak in 2009. That said, our empirical work so far did not generate strong empirical support for the hypothesis that the availability or introduction of special bank failure resolution regimes has been successful in reducing the incidence of implicit guarantees.

## **VI. Concluding remarks**

The global financial crisis and the form of the policy response have placed a sharp spotlight on the issue of implicit guarantees for bank debt. Such guarantees are typically associated with the status of too-big-to-fail; the data analysed for this report shows that the incidence of implicit guarantees extends to banks beyond the list of 29 banks identified in November 2011 by the FSB as being systemically important on a global basis. This report shows that

- i) the extent of implicit guarantees differs from one banking sector to another and, within a banking sector, from one bank to another,
- ii) that implicit guarantees are higher the lower the bank's stand-alone creditworthiness, the higher the creditworthiness of its sovereign and the relatively bigger the bank in its domestic context,
- iii) that the incidence of implicit guarantees increased since the beginning of the financial crisis, but has decreased more recently,
- iv) that the recent decline can be explained to a significant degree by declining sovereign strength and a reduced capacity of on the part of many sovereigns to provide for such guarantees, and
- v) that this recent decrease is consistent with ongoing efforts in many OECD countries to make bank failure resolution regimes and practices more effective, and
- vi) that implicit guarantees persist.

Implicit guarantees imply a very significant funding cost advantages for the banks that benefit from them. They thus create distortions to competition and an invitation to use them and, perhaps, take on too much risk.

The preliminary discussions by the OECD's Committee on Financial Markets on the issue suggest that there is no unanimity as regards to what the policy response should be. Should the implicit guarantee be made explicit and a user fee charged in turn? Delegates were rather sceptical regarding this suggestion. That said, some delegates were open to the idea of charging user fees for government guarantees, thus effectively transforming implicit guarantees into explicit ones. Many others suggested however that the focus should be on reducing guarantees through indirect charges in the form of higher capital and other requirements, so as to incentivise banks to become smaller, less complex and interconnected, and hence, more resolvable. Before firmer conclusions can be drawn, the Committee agreed that policymakers need to better understand what explains the persistence of implicit guarantees.

There was unanimity regarding the suggestion to improve the frameworks for bank failure resolution so as to facilitate the task of limiting implicit guarantees. Special bank failure resolution regimes were introduced and national bank resolution legislation changed between 2008 and 2012 in many countries, with the details of legislation differing from one country to another. What is similar, however, is that the introduction of such regimes at the national level is largely motivated by the observation that the lack of effective resolution regimes during this global financial crisis has severely limited the options available to policymakers. In fact, this situation has typically inclined policy makers to resort to so-called "bail-outs" and extensive use of guarantees when faced with acute stress in their domestic banks.

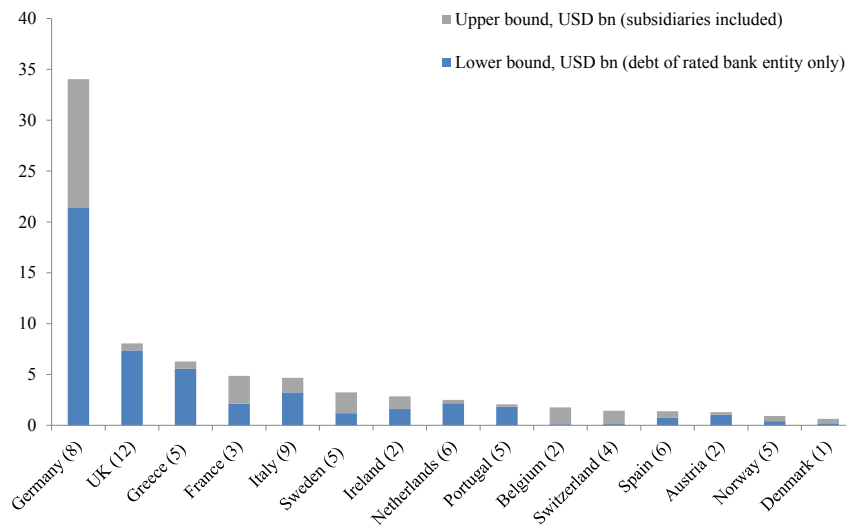
**APPENDIX 1: SOME DETAILS ON THE ESTIMATION OF FUNDING COST ADVANTAGE**

Figures A.2 and A.3 contain alternatives, using data from both Moody's and Fitch Ratings, to the estimates shown in Figure 4 and 5 in the main text. All estimates are obtained using a series of different steps.

- For each bank in the sample, the hypothetical cost of bond issuing is estimated, either with or without the respective credit rating uplift.
- To obtain a measure of the hypothetical costs of bond issuing for each rating category, we estimate a function that maps ratings to yield spreads, using reference or observed yield spreads for different rating categories where available (Figure A.3). In particular, where available, we use the Bloomberg's fair market value curves for bank bonds issued in Euro with maturities of five years (indicated by light circles). That fair value price calculated by Bloomberg indicates where the price of a bond should trade based on where comparably rated bonds actually do trade. Similar estimates are not available for lower rated bonds, unfortunately. Instead, we collect data on observed secondary market yield spreads for bonds with a maturity of five years issued by such lower rated banks (indicated by dark circles). To obtain estimates for the remaining rating categories for which no observations are available, we apply a simple (non-linear) interpolation.
- We then calculate the funding cost advantage as the difference between the estimated costs. For convenience, the example of a bank with a stand-alone credit rating of Ba3 and an all-in credit rating of Baa1 is singled out for special attention in Figure A.3. This example implies a (very large) uplift of 5 notches. The implied yield spread reduction in this (extreme) case is 560 basis points.
- This estimated funding cost advantage is then multiplied by the credit-rating sensitive liabilities of the bank,<sup>19</sup> with a lower bound defined by the multiplication with the debt of the rated issuer only and an upper bound defined by including debt of subsidiaries. As a proxy for those liabilities we use "outstanding bonds and loans", which are readily available from Bloomberg for most banks in the sample. In the case of one bank (with a positive uplift) for which data from Bloomberg was unavailable we used data from the bank's annual report instead.



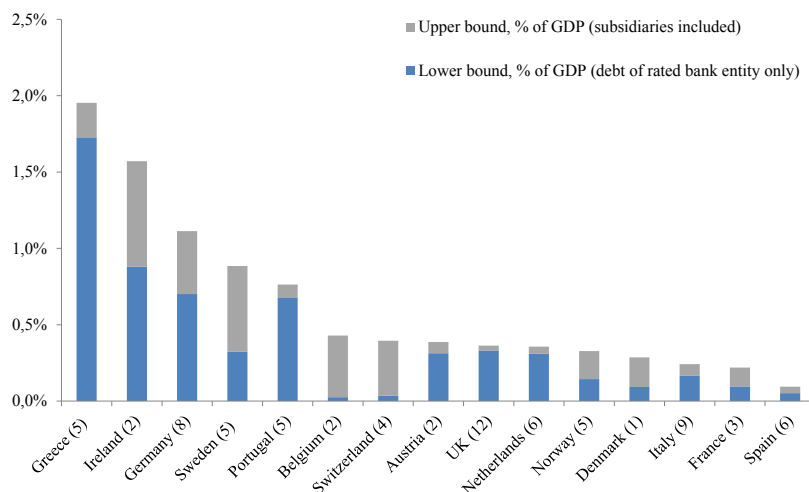
**Figure A.1. Estimated yearly cost reduction in USD billion per country where banks are headquartered**  
Using credit ratings from Moody's and Fitch Ratings



Notes: Estimated implied yearly reduction in cost of outstanding debt, in billion USD, per country in which banks are headquartered (which does not necessarily imply equivalent local taxpayer burden). Average of uplifts implied by data from Moody's and Fitch Ratings. Number of banks in parenthesis. The sample consists of a total number of 75 large banks that are rated by both Moody's and Fitch.

Sources: OECD Secretariat estimates, Bloomberg, Moody's, Fitch Ratings, Bankscope, and OECD.

**Figure A.2. Estimated yearly cost reduction in relation to GDP per country where banks are headquartered**  
Using credit ratings from Moody's and Fitch Ratings

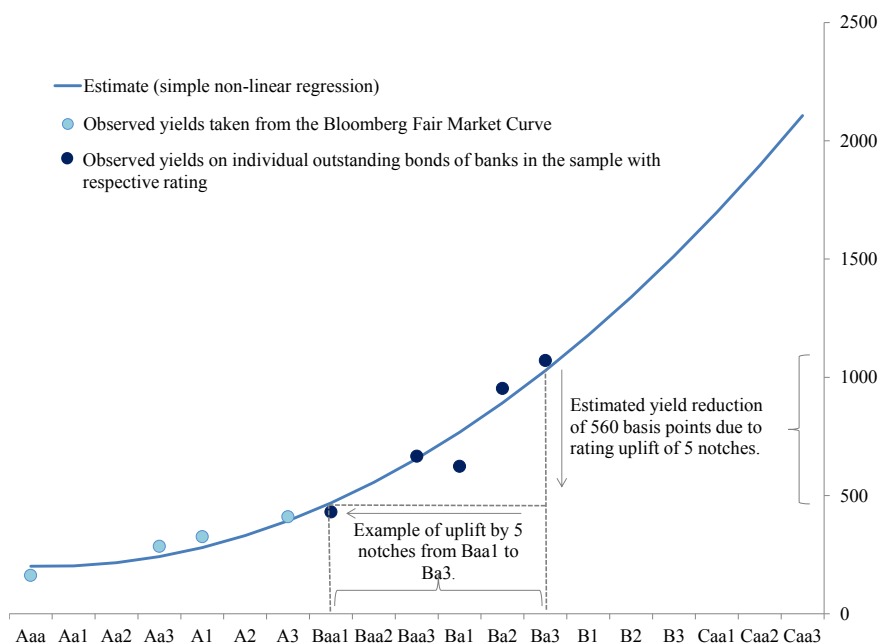


Notes: Estimated implied yearly reduction in cost of outstanding debt, in billion USD, per country in which banks are headquartered (which does not necessarily imply equivalent local taxpayer burden). Average of uplifts implied by data from Moody's and Fitch Ratings. Number of banks in parenthesis. The sample consists of a total number of 75 large banks that are rated by both Moody's and Fitch.

Sources: OECD Secretariat estimates, Bloomberg, Moody's, Fitch Ratings, Bankscope, and OECD.

**Figure A.3. Mapping of credit rating uplifts to estimated yield spread reductions**

Estimates in basis points based on observed yield spreads, March 2012

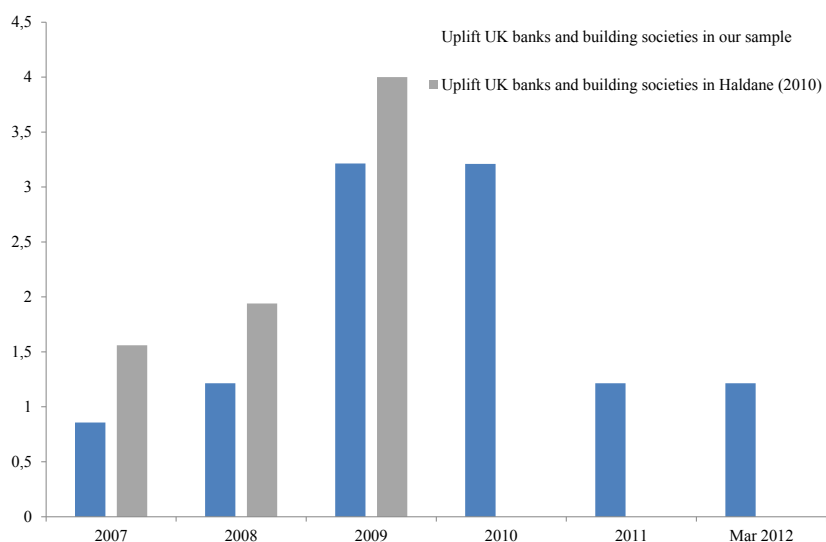


*Notes:* Value of reduction in yield spread in basis points, implied by a move up the rating ladder due to the credit rating uplift (i.e. the difference between the "all-in rating" and "stand-alone credit rating"). German government 5 year bonds are used as benchmark.

*Sources:* OECD Secretariat estimates based on data from Bloomberg and Moody's.

**Figure A.4: Estimated average credit rating uplift for UK banks**

Comparison of uplifts implied by our sample with that reported in Haldane, 2010



*Notes:* Haldane considers 16 banks and building societies in 2007 and 2008 and 13 in 2009. Our sample consists of 14 banks and building societies.

*Source:* OECD Secretariat estimates based on data from Bloomberg, Moody's, and Haldane (2010).

## NOTES

- 1 More precise definitions are provided in the third section of chapter 3.
- 2 Implicit sovereign guarantees for bank debt increase the franchise value of a bank and, conceptually, can also reduce risk-taking, but the weight of the empirical evidence suggests that this effect is less prevalent.
- 3 See e.g. Campolongo *et. al.* (2011).
- 4 See for a discussion of some of the interlinkages in the case of *explicit* bank bond guarantees e.g. Panetta *et. al.* (2009), CGFS (2011), Grande *et. al.* (2011), and Levy and Schich (2010).
- 5 The term “incidence” is used here simply to describe where implicit guarantees can be observed and where not; it is not meant to allude to the concept of “tax incidence” and who might ultimately pay or not for the guarantees.
- 6 The data for AICR refers to Moody’s assessment of a banks’ “long-term issuer credit rating” or “senior unsecured rating”. For a few banks for which neither of these ratings was available, we considered the “long-term bank deposit rating” instead.
- 7 A careful analysis of the determinants of AICR and in particular the role of government support is provided by Ueda and Weder di Mauro (2012). The authors consider a sample of several hundreds of bank worldwide and regress AICR on SACR and control variables. They find that a one-notch increase in government support, on average, improves the AICR by 0.55 to 0.9 notches (one notch is the difference between two subsequent rating categories). The authors use a fixed effects model, similar to the one considered in section 5 of this paper, although they use an ordered probit rather than a linear model. Ueda and Weder di Mauro rely on data from Fitch Ratings (Fitch).
- 8 Moody’s allows us to create a consistent time series of all-in and stand-alone credit ratings going back to 2007. Fitch Ratings historically publicized both all-in rating and stand-alone rating, but changed its methodology for estimating the stand-alone rating in February 2012 (replaced by so-called viability ratings, as announced in July 2011). Another advantage of the data made available by Moody’s is that the agency has recently published an adjusted stand-alone credit rating, which already factor in assumed parental and cooperative support, so that the difference to the all-in crediting rating provides us with a more precise measure of the public support due to (regional government) and systemic support. That data is however not readily available from Bloomberg and was collected on a bank-by-bank basis from the website of Moody’s. For 14 banks however we have not been able to find information about the adjusted stand-alone credit rating as of end 2010. In those cases we have instead used the stand-alone credit rating. For none of these 14 banks, there was a difference between the adjusted SACR and the SACR as of mid-March 2012.
- 9 While the sample consists of the 123 largest financial institutions measured in terms of total assets for which data is available for both the all-in and the stand-alone credit rating by Moody’s during the period end 2010 and mid-March 2012, the sample size falls to 118 when considering historical data since 2007.
- 10 Moody’s has started recently a process of systematically reviewing the ratings for European banks in 16 European countries where the all-in credit ratings and stand-alone credit ratings have been placed on potential downgrading (Moody’s 2012). The full review is expected to be completed by the end of June 2012.

- 11 Note that these studies consider SACR rather SACR\* (as is done here) when calculating the credit rating uplift, thus calculating UPLIFT rather than UPLIFT\*. The latter is lower, thus tending to imply lower estimates of funding cost advantages. To avoid double counting when estimating the debt cost reduction we have, as a general rule, chosen not to include subsidiaries in the sample. There are however some exemptions. Dexia Credit Local (France) and Dexia BIL (Luxembourg) are two of those. These banks are subsidiaries to the Dexia Group in Belgium which is not rated by Moody's.
- 12 Haldane (2010) consider a proxy for banks' "ratings-sensitive liabilities" that excludes for example banks' retail deposits but includes wholesale borrowing. Our study considers "outstanding debt".
- 13 Noos & Sowerbutts (2012) illustrate how the mapping from ratings to yields spread advantages changes over time, which is one of the factors influencing the funding cost estimates.
- 14 For some countries, the estimates are largely driven by specific banks such as WestLB AG in Germany (representing about 30 per cent of the estimated reduction in funding cost for banks headquartered in Germany) and Dexia Credit Local in France (42 per cent).
- 15 For example, the Basel III framework foresees the use of a set of indicators to determine additional capital charges for global systemically important banks, with the additional capital charges which range from 1.0% to 2.5%, to be phased in by 1 January 2019.
- 16 In particular, we consider a measure of the banks' relative importance compared to other domestic banks within the sample, by calculating the share of each banks' assets in relation to the assets of all domestic banks in the sample per country. We also considered two other size measures alternatively, that is a bank's assets as of total sample bank assets and a bank's assets as of its domestic economy's GDP. We report the results for the first measure as, according to our assessment, it best describes the notion of size of a bank in relation to its domestic peers and are most closely related to the notion of TBTF. It turns out that the results using either one of the two other two measures considered do not always suggest a significant role for the bank size measure in the regression.
- 17 In the level regression (Table 1), we use the value of assets as of end-2010. We did not have available data for bank assets as of end-2011. Table 2 shows the results effectively assuming a zero change in that variable (which implies that it drops out from the regression specification). Including the variable in level form (results not shown here) does not affect the main results. The variable turns out to be insignificant.
- 18 In addition, we experimented with a range of dummy variables, e.g. to proxy for a country's resolution regime or practices and the role of public ownership. Several of the dummy variables turned out to be significant, but the results did not appear to be robust. Perhaps most robust were the results when including a dummy variable for public ownership exceeding 50 per cent. It was significant and positive, meaning that majority public ownership explains part of the uplift. Dropping that variable from the specification left the other results very much unaffected, except that the coefficient of explained variation of the regression dropped by around 7 percentage points.
- 19 As a proxy for those liabilities we use "outstanding bonds and loans" issued in the market, which are readily available from Bloomberg for most banks in the sample. In the case of one bank (with a positive uplift) for which data from Bloomberg was unavailable we used data from the banks' annual report instead.

## REFERENCES

- Campolongo, F., M. Marchesi, and R. De Lisa (2011), “The potential impact of banking crises on public finances: an assessment of selected EU countries using SYMBOL”, *OECD Financial Market Trends* Vol. 2011/2, October; <http://www.oecd.org/dataoecd/53/62/48989235.pdf> .
- Committee on the Global Financial System (CGFS, 2011), “The impact of sovereign credit risk on bank funding conditions”, Report by a Study Group established by the CGFS and chaired by Fabio Panetta of the Banca d’Italia, CGFS Papers No. 43, July; <http://www.bis.org/publ/cgfs43.pdf> .
- Estrella, A. and S. Schich (2011), “Sovereign and banking sector debt: Interconnections through implicit guarantees”, *OECD Financial Market Trends* Vol. 2011/2, October; available at [www.oecd.org/daf/fin](http://www.oecd.org/daf/fin) .
- Fitch Ratings (2010), “Definitions of ratings and other forms of opinion”, August 2010; available at [http://www.fitchratings.com/web\\_content/ratings/fitch\\_ratings\\_definitions\\_and\\_scales.pdf](http://www.fitchratings.com/web_content/ratings/fitch_ratings_definitions_and_scales.pdf)
- Fitch Ratings (2011:1) “Global financial institutions rating criteria”, 16 August 2011; [http://www.fitchratings.com/creditdesk/reports/report\\_frame.cfm?rpt\\_id=649171](http://www.fitchratings.com/creditdesk/reports/report_frame.cfm?rpt_id=649171)
- Fitch Ratings (2011:2) ”Viability Ratings: An Introductory Primer”, Special report, 20 July 2011; [http://www.fitchratings.com/bo/Upload/Viability%20Ratings\\_2011.pdf](http://www.fitchratings.com/bo/Upload/Viability%20Ratings_2011.pdf)
- Grande, G., A. Levy, F. Panetta and A. Zaghini (2011), “Public guarantees on bank bonds: Effectiveness and distortions”, *OECD Financial Market Trends* Vol. 2011/2, December; available at [www.oecd.org/daf/fin](http://www.oecd.org/daf/fin) .
- Haldane, A. (2010), “The \$100 billion question”, *BIS Review* 40/2010; <http://www.bis.org/review/r100406d.pdf> .
- Guðmundsson, M. (2011), “The fault lines in cross-border banking: Lessons from the Icelandic case”, *OECD Financial Market Trends* Vol. 2011/2, October; <http://www.oecd.org/dataoecd/63/63/48979012.pdf> .
- Levy, A. and S. Schich (2010), “The design of government guarantees for bank bonds: Lessons from the recent financial crisis”, *OECD Financial Market Trends* Vol. 2010/2, July; <http://www.oecd.org/dataoecd/46/47/45636972.pdf> .
- Morgan, D. and K. Stiroh (2005), “Too big to fail after all these years”, *Federal Reserve Bank of New York Staff Report*, No. 220; [http://www.newyorkfed.org/research/staff\\_reports/sr220.html](http://www.newyorkfed.org/research/staff_reports/sr220.html) .
- Moody’s (2011), “Status report on systemic support incorporated in Moody's bank debt ratings globally”, 28 November.
- Moody’s (2012), “Rating Action: Moody's Reviews Ratings for European Banks”, 15 February.

- Noss, J. And R Sowerbutts (2012), “The implicit subsidy of banks”, Bank of England, 15 May 2012; [www.bankofengland.co.uk/publications/Documents/fsr/fs\\_paper15.pdf](http://www.bankofengland.co.uk/publications/Documents/fsr/fs_paper15.pdf).
- Packer, F. and N. Tarashev (2011), “Rating Methodologies for Banks”, BIS Quarterly Review, June; [http://www.bis.org/publ/qtrpdf/r\\_qt1106f.pdf](http://www.bis.org/publ/qtrpdf/r_qt1106f.pdf)
- Panetta F., T. Faeh, G. Grande, C. Ho, M. King, A. Levy, F. M. Signoretti, M. Taboga, and A. Zaghini (2009), “An assessment of financial sector rescue programmes”, BIS Papers, No.48; <http://www.bis.org/publ/bppdf/bispap48.pdf>
- Rime, Bertrand (2005), “Do „too big to fail“ expectations boost large banks issuer ratings?”, Paper presented at the Workshop of the Research Task Force of the Basel Committee in Vienna on 20 April 2005; <http://www.bis.org/bcbs/events/rtf05Rime.pdf>
- Schich, S. (2009), “Expanded Guarantees for Banks: Benefits, Costs and Exit Issues”, OECD *Financial Market Trends* Vol. 2009/2, November; <http://www.oecd.org/dataoecd/53/48/44260489.pdf>
- Sveriges Riksbank (2011), “Appropriate capital ratio in major Swedish banks – an economic analysis”, Sveriges Riksbank, 6 December 2011; [http://www.riksbank.se/Upload/Rapporter/2011/rap\\_appropriate\\_capital\\_ratio\\_in\\_major\\_swedish\\_banks\\_111206\\_eng.pdf](http://www.riksbank.se/Upload/Rapporter/2011/rap_appropriate_capital_ratio_in_major_swedish_banks_111206_eng.pdf)
- Ueda, K. and B. Weder di Mauro (2012), “Quantifying structural subsidy values for systemically important financial institutions”, IMF *working paper*, WP/12/128, May 2012; <http://www.imf.org/external/pubs/ft/wp/2012/wp12128.pdf>