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## Article

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# Need for Reform of EU Banking Regulation: Decoupling the Solvency of Banks and Sovereigns

by Johannes Pockrandt and Sören Radde

Recent developments in Ireland, Greece, and Spain have shown that sovereign debt crises endanger the solvency of domestic banking sectors, while banking crises in turn endanger the solvency of the domestic sovereigns. This diabolic loop between government and bank solvency is exacerbated by the home bias in banks' government bond portfolios, that is, banks' excessive exposure to domestic sovereign debt. Neither current European banking regulation nor plans to implement Basel III in the EU take this interdependence into account. Both treat government bonds of Member States as risk-free, highly liquid assets and exclude them from capital requirements and large exposure regimes. Future EU banking regulation should aim to remedy this. Consequently, EU government bonds could be given risk weights specific to each country. At least in the Euro area, however, a strict limitation of bank investments to cross-border sovereign debt without country-specific risk would be more effective. The advantage of this reform is that it could be integrated into a variety of scenarios for future government refinancing in the Euro area.

On October 20, 2009, less than two weeks after the change of government in Greece, the new finance minister announced a deficit of at least twelve percent for the current fiscal year. The Greek government was thereby seriously infringing on the deficit limit for European Member States. On April 23, 2010, it made an official request for financial aid and loan guarantees from the European Union (EU) and the International Monetary Fund (IMF) totaling 110 billion Euros. On March 9, 2012, the majority of Greece's private creditors agreed to a partial haircut. Subsequently, the four major Greek banks—National Bank, Eurobank, Piraeus, and Alpha—announced losses of over 28 billion Euros. The Greek government had brought the Greek banking sector to the brink of collapse.

On March 31, 2010, Anglo Irish Bank announced the biggest loss in Irish corporate history. The Irish banking sector's former flagship had run aground, despite billions in capital injections from the Irish government. On August 10, 2010, the European Commission approved temporary government aid worth ten billion Euros. By the end of 2010, Anglo Irish Bank had received three times this amount from government, Allied Irish Bank more than ten billion Euros, and Irish Nationwide Building Society over five billion. On November 21, 2010, Ireland asked for assistance from the EU and IMF's Euro rescue fund. Bailing out its domestic banks cost the country a total of almost 64 billion Euros, equivalent to over 40 percent of gross domestic product. The Irish banking sector had brought the Irish government to its knees.

On May 25, 2012, the fourth largest bank in Spain, Bankia, asked its government for 19 billion Euros in financial assistance. So far, Spain has not sought assistance from the European Stability Mechanism. But it does seem increasingly difficult for Spain to break the diabolic loop between banking and sovereign risk.

## The Diabolic Loop between Banking and Sovereign Risk

As the aforementioned examples show, the credit risks of sovereign countries and their domestic banking sectors are closely linked and mutually reinforcing. What explains this diabolic loop? The Greek case shows that, banks, as major investors in government bonds, are affected by governments defaulting on their debt through direct losses. Long before an actual default, difficulties in government refinancing already affect the refinancing conditions in the domestic banking sector.<sup>1</sup> Banks use long-term government bonds in particular as collateral for short-term loans with which they cover their liquidity needs. Concerns among investors and rating agencies that governments will not be able to fully pay off their debt lead to declining credit ratings of government bonds. Consequently, a haircut is applied to government bonds in refinancing operations which reduces their collateral value. Haircuts are also applied by the European Central Bank (ECB) when lending to commercial banks as part of their short-term main refinancing operations (MROs) and longer-term refinancing operations (LTROs).<sup>2</sup> In short, downgrading government bonds reduces the volume of secured loans and, therefore, has an adverse effect on short-term refinancing options for banks. Thus, risks arising from banks' maturity transformation increase sharply. A lower government rating may also result in rating downgrades for domestic banks. First, government guarantees for individual institutions or specific liabilities in the banking sector will lose credibility. Second, a rating downgrade also raises doubts about the ability of a government to save systemic financial institutions from impending insolvency. They no longer benefit from an implicit "bail-out" guarantee. Both effects increase the refinancing costs of unsecured loans. Sovereign debt crises also affect the banking sector through more indirect channels. Rising inflation expectations due to monetization of government debt, the decline in government spending, or tax increases for budgetary consolidation may curb economic activity and reduce the demand for bank-intermediated credit.

Conversely, the risk of bank defaults raises the financing costs of sovereigns. The credit rating of a country is weakened indirectly if the supply of credit falls due to extraordinary strains on the banking sector. A credit crunch, in particular, curbs investment and has a ne-

gative impact on growth, which in turn reduces tax revenue. The fear of a credit supply collapse may even cause governments to directly support their domestic banks through guarantees, capital injections, or by buying up loss-making assets. As the example of Ireland demonstrates, the associated burdens may put a strain on government financing, which in turn increases refinancing costs for the financial sector through the channels described above.

This mutual contagion in the credit risks of banks and sovereigns is reflected in the market for credit default swaps (CDS). In the Euro area, there is a strongly positive correlation between premiums on credit default swaps for five-year bonds issued by banks and their respective countries (see Figure 1). It is worth noting that this correlation exists independently of the country's credit rating—it applies equally to countries particularly affected by the debt crisis on the periphery of the Euro area (Spain, Italy, Portugal, and Greece) and the core countries with high ratings (Germany, Austria, the Netherlands, and France). Although the level of default risk in these two groups of countries—and therefore also in their banking sectors—is decoupled (see Figure 2), government bonds are no safe asset class in either group.

The diabolic loop between banking and sovereign debt crises could have been attenuated had banks diversified their government bond portfolios across Euro area member states. However, banks invest to a large extent in the government bonds of their home countries which increases the interdependence between sovereign and bank risk through the previously described channels.<sup>3</sup>

Using stress-test data from the European Banking Authority (EBA) from December 2010 we examine this bias towards domestic sovereign debt in greater detail (see Figure 3). The sum of European government bonds held by European banks (EU sovereign debt in the EU banking sector) serves as a reference value. On average, 58 percent of a sovereign's outstanding debt in the EU banking sector were held by the domestic banking sector (home share); in countries such as Germany, the share was even higher (73 percent). However, this measure ignores the fact that large EU countries issue proportionally more debt than small countries. Their share in an EU-wide diversified bond portfolio should correspondingly be larger. Therefore, we adjust the home share by the share of the home country's debt in overall EU sovereign debt held by the European banking sector. The resulting "home bias" measures the bias of the

<sup>1</sup> See M. Davies and Tim Ng, "The Rise of Sovereign Credit Risk: Implications for Financial Stability," BIS Quarterly Review (September 2011).

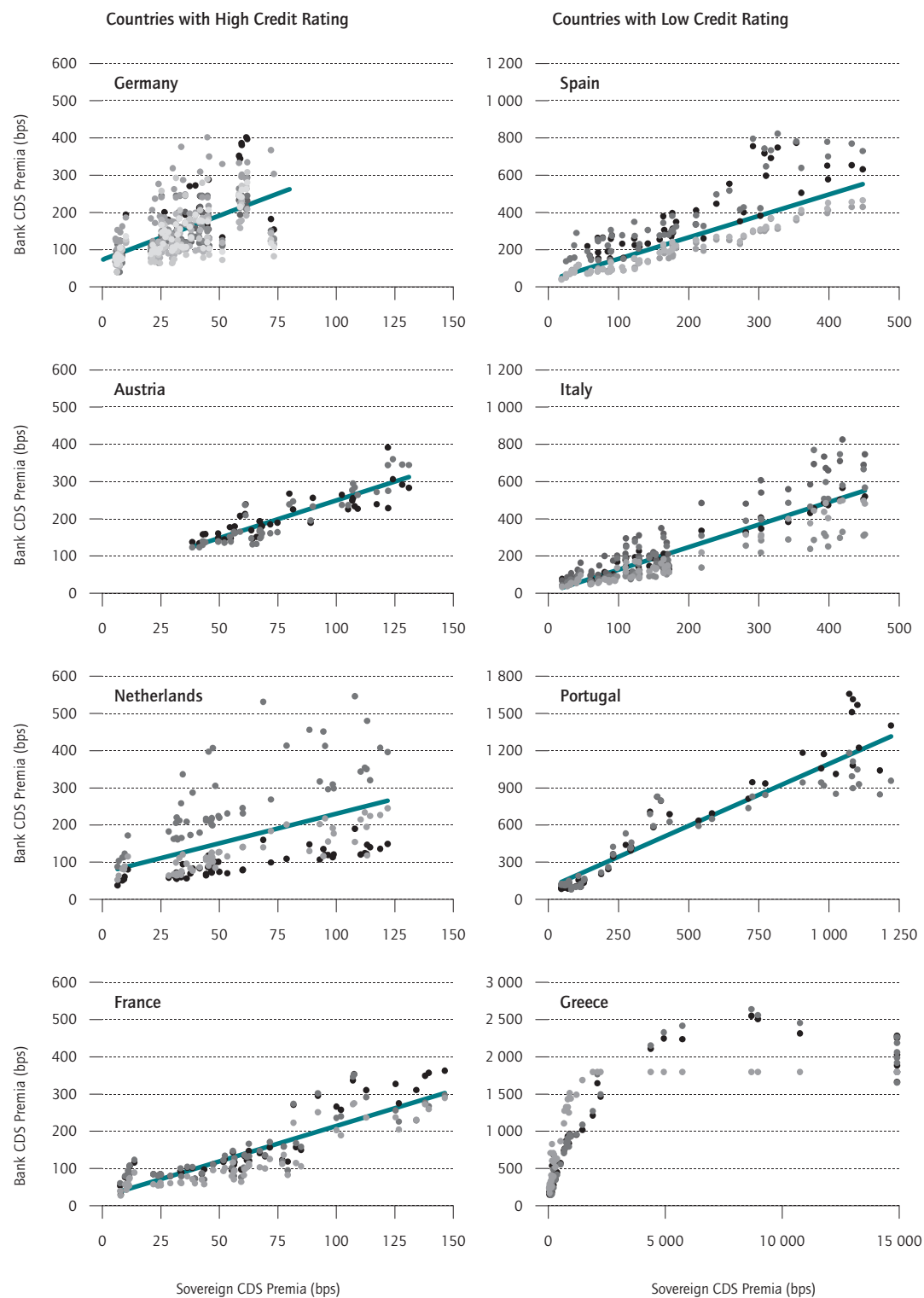
<sup>2</sup> For more information on ECB haircuts for different asset classes and credit ratings, see [http://www.ecb.int/press/pr/date/2010/html/sp090728\\_1 annex.en.pdf](http://www.ecb.int/press/pr/date/2010/html/sp090728_1 annex.en.pdf).

<sup>3</sup> See S. Merler and Jean Pisany-Ferry, "Hazardous Tango: Sovereign Bank Interdependence and Financial Stability in the Euro Area," Banque de France Financial Stability Review, no. 16 (April 2012).

Figure 1

**Correlation between CDS Premia<sup>1</sup> on Sovereign and Bank Bonds**

In basis points



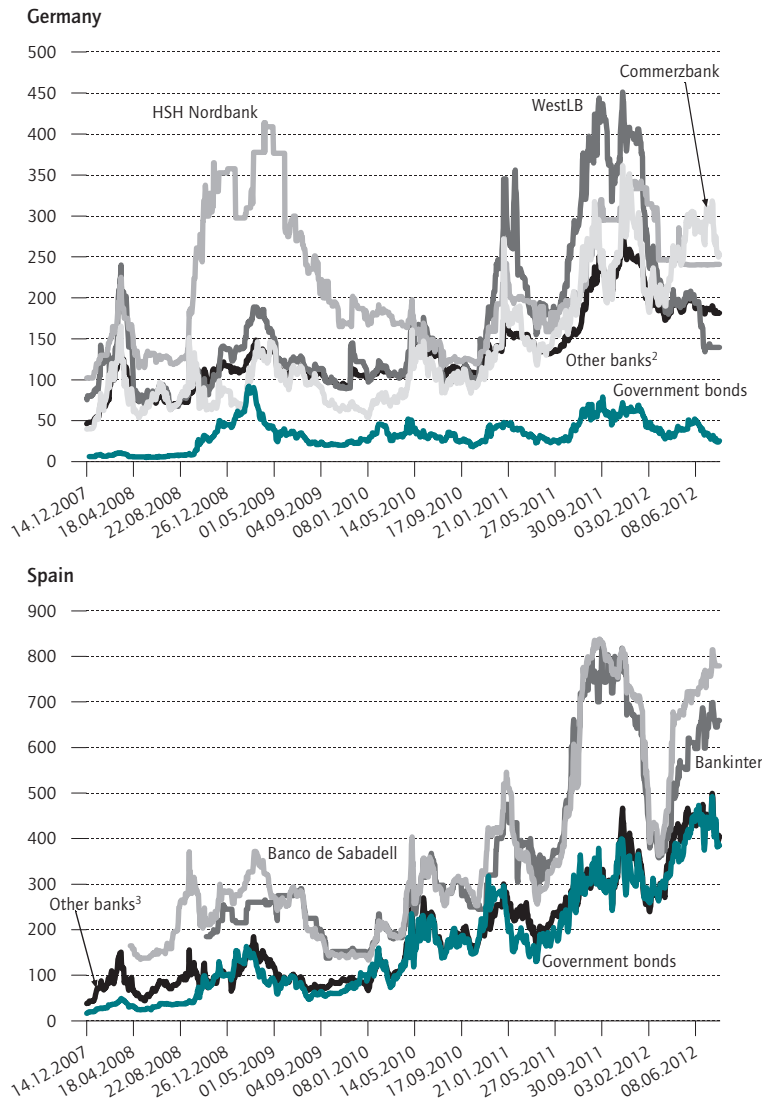
<sup>1</sup> Premia for credit default swaps (CDS) on 5-year bonds of stress-test banks and domestic governments, monthly averages from December 14, 2007 to August 13, 2012.

Source: Datastream; calculations by DIW Berlin.

Figure 2

**CDS Premia<sup>1</sup> in Germany and Spain**

In basis points



1 Premia for credit default swaps (CDS) on 5-year bonds.  
 2 Bayerische Landesbank, Deutsche Bank AG, Landesbank Baden-Württemberg, Landesbank Berlin, and Nord LB are combined.  
 3 BBV Argentario SA and Banco Santander SA are combined.  
 Source: Datastream; calculations by DIW Berlin.

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Euro area countries with high and low credit ratings have decoupled in terms of the level of default risks.

European government bond portfolio of a banking sector in favor of its home country. Even this conservative measure puts average excessive domestic government debt in EU banking sectors at 53 percent. In countries with sovereign debt strains such as Greece, Portugal,

Spain, Italy, and Ireland the home bias was significantly above average at over 60 percent; in the core countries, Germany, the Netherlands, France, and Austria, on the other hand, the bias was below average.<sup>4</sup>

Government bond portfolios pose serious risks, particularly for banking sectors that either lack diversification or are poorly capitalized. On average, European banks' exposure to their domestic sovereign amounted to 78 percent of total equity (Tier 1-3).<sup>5</sup> The exposure-to-equity ratio was highest in Greece with 180 percent (see Figure 4). A haircut of 50 percent at this point would have reduced Greek banks' equity by 90 percent and practically pushed them into insolvency.

The risks incurred due to excessive home bias in government bond portfolios are also reflected in the credit risks, and therefore CDS premia at individual bank-level (see Figure 5).

**Sovereign Risk in Banking Regulation**

The demonstrable interdependence of government and bank solvency hints at the riskiness of government financing as part of the European financial institutions' business model—particularly in relation to the respective national banking sector. It also points to the need for separating the solvency of central governments from that of domestic banking sectors through adequate regulation, thereby reducing systemic risk, both for the national economy and for the international financial system. Against this background, it is astounding that European government debt is being treated as riskless in both past and currently applicable EU banking regulations, as well as those under negotiation. This is clear in the core areas of European banking regulations for government bonds: capital adequacy rules, the regulation of large exposures, and liquidity requirements.

**Capital Requirement Rules**

The current EU regulatory framework requires financial institutions to hold a minimum amount of capital for the loans they issue to other financial institutions,

4 In the wake of the European sovereign debt crisis, the proportion of foreign government bond buyers decreased in the affected countries. Foreign investors were replaced, in particular, by domestic banks. Political pressure is seen as a major driver of this development. See S. Merler and Jean Pisany-Ferry, "Who's Afraid of Sovereign Bonds?," Bruegel Policy Contribution, issue 2012/02.  
 5 This measure for equity capital is very generous. In the EBA's 2011 bank stress test, only core equity (Tier 1) was recognized as fully loss-bearing. On this basis, exposure to government bonds would have been even greater.

companies, individuals, or governments. An institution should hold enough capital reserves to cope with, inter alia, the financial burden of non-serviced loans or systemic shocks, without directly restricting financing for the real economy. The amount of capital a bank must hold depends on the risk weighting of a loan which is derived from the credit worthiness of the borrower. According to the second EU Capital Requirements Directive (CRD II), eight percent of the loan volume would have to be kept as equity for a risk weighting of 100 percent. However, a risk weight of zero is currently applied to government debt of EU Member States. As a result, European government bonds are considered to be risk-free investment products that require no capital backing.

The capital requirement rules for the European banking sector are based on the Accords of the Basel Committee on Banking Supervision (BCBS) but differ from them in key areas. The Basel II rules allow financial institutions to take two approaches to the risk weighting of government debt. The IRB (internal ratings-based) approach lets financial institutions themselves assess the credit rating of individual governments. There is explicitly no zero weighting in this approach. Rather, the IRB approach requires a meaningful differentiation of risk weights based on the respective credit default risks. However, the standardized approach makes reference to external credit ratings and gives government bonds with high credit ratings a risk weight of zero percent.<sup>6</sup>

The inclusion of Basel II rules into European law was initially implemented in CRD I.<sup>7</sup> It made a crucial change to the standardized approach to government debt: claims on central governments and the central banks of Member States are, regardless of their rating, assigned a zero risk weight if they are denominated in the local currency and refinanced in that currency.<sup>8</sup> But large banks generally assess their credit risks according to the IRB approach. Although they too may assign a zero weight to government debt, this is due to another exemption clause: even if exposures to private counterparties are assessed according to the IRB approach, the modified standardized approach may be applied to government bonds. Thus, claims on Member States are systematically privileged in terms of their risk weighting.<sup>9</sup>

<sup>6</sup> Bonds with AAA to AA- credit ratings are assigned a risk weight of zero percent. A, BBB and BB+ to BB- are given a risk weight of 20, 50, and 100 percent, respectively. Credit ratings below BB- are given a risk weight of 150 percent.

<sup>7</sup> CRD I is used as a technical term and refers to the recast Banking Directive (2006/48/EC) and the recast Capital Adequacy Directive (2006/49/EC).

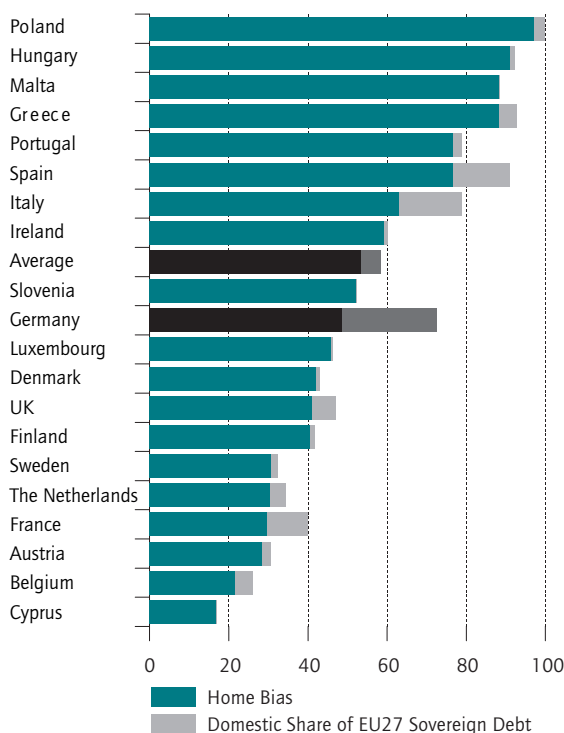
<sup>8</sup> See Directive 2006/49/EC, Annex I, Paragraph 14 in conjunction with Directive 2006/48/EC, Articles 78-83 and Annex VI, Section 1. 2, Number 4.

<sup>9</sup> See Directive 2006/48/EC, Article 76.

Figure 3

**Home Bias in Government Bond Portfolios**

In Home Bias in Government Bond Portfolios



Source: EBA 2011 Stress Test, December 31, 2010; calculations by DIW Berlin.

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**Banks invest heavily in domestic government bonds.**

In subsequent directives CRD II<sup>10</sup> and CRD III,<sup>11</sup> zero weighting remained unaffected, and has also gone unchallenged in ongoing negotiations on the implementation of Basel III rules as part of the CRD IV package.<sup>12</sup> Basel III requires an increase in the capital requirements for banks of up to 10.5 percent of risk-weighted assets. In light of refinancing difficulties in several euro countries on the international bond markets, these stricter requirements are not, however, applicable to government bonds in accordance with implementation proposals by the European Commission, and compromise texts of the European Parliament and the Council of Member States.

<sup>10</sup> See Directive 2009/111/EC.

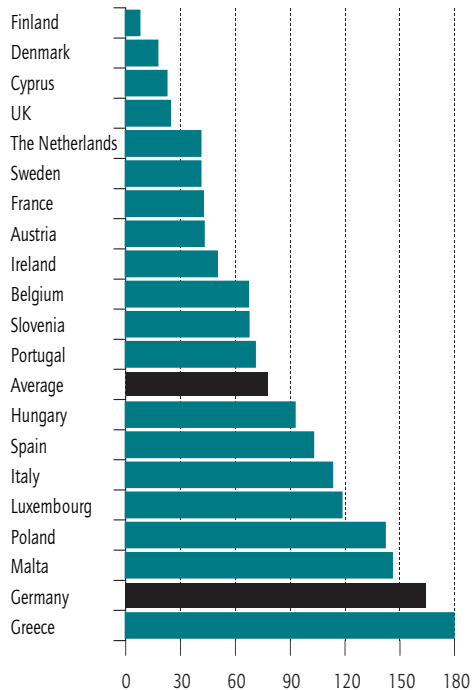
<sup>11</sup> See Directive 2010/76/EU.

<sup>12</sup> See COM (2011) 452, Article 109, Paragraph 4.

Figure 4

**Exposure<sup>1</sup> to Home Sovereign**

In percent



1 Ratio of domestic government bonds to equity. Source: EBA 2011 Stress Test, December 31, 2010; calculations by DIW Berlin.

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Exceptions in large exposure regime allows high exposure to the domestic sovereign.

**Large Exposure Regime**

The capital requirements for European banks have given them a clear incentive to invest in European government bonds rather than in private securities with similar risk prospects.<sup>13</sup> This investment behavior is further fuelled by the large exposure regime. Under the existing implementation of Basel II rules in CRD I legislation, a loan from a financial institution to a client or a group of connected clients is considered a large exposure where its value is equal to or exceeds ten percent of the issuing financial institution's own funds.<sup>14</sup> Large exposures are also limited to a maximum of 25 percent of the financial institution's own funds.<sup>15</sup> However, it is at the discretion of Member States to partially or wholly exempt such loans from the large exposure regime, which represent zero-weighted claims on a central go-

vernment or a central bank.<sup>16</sup> Thus, excessive exposure by individual banks to the bonds of individual Member States is allowed. In fact, this is expressed primarily as a significant risk concentration on their home countries, the home bias. Large exposure rules in the Commission's CRD IV proposal have not been changed significantly from CRD I.<sup>17</sup> The exception for zero-weighted government bonds remains.<sup>18</sup> In current negotiations, only the European Parliament has been pushing for the Economic and Monetary Affairs Committee's text to include guidelines that financial institutions should not hold disproportionate amounts of sovereign debt from any specific country. Moreover, the European Banking Authority (EBA) should set guidelines on appropriate levels of exposure.<sup>19</sup> This requirement, however, will be difficult to implement politically. There is clear resistance by various national delegations in the European Parliament as well as in the Council.

**Liquidity Rules**

The implementation of Basel III rules as part of the CRD IV package will also require European banks to build up short-term liquidity buffers. The Liquidity Coverage Ratio (LCR) was introduced to ensure banks could cover their liquidity needs in a crisis situation by retaining highly liquid assets for more than 30 calendar days. The LCR specifies liquidity required with respect to a stress scenario designed by the Banking Supervisory Authorities and based on systemic and bank-specific shocks. To meet the LCR, assets are divided into two broad categories: highly liquid and less liquid. Government bonds are declared highly liquid and can be included in unlimited amounts in the liquidity buffer. Less liquid assets may only represent up to 40 percent of the buffer. Basically, the Commission's proposal on implementing liquidity requirements calls on financial institutions and investment firms to hold as many different assets as possible to cover their immediate liquidity needs.<sup>20</sup> It does, however, not contain specific rules for such differentiation, nor do the compromise texts of Parliament and Council. The introduction of the LCR and, in particular, its specific design at European level is expected to provide a further incentive for European banks to buy and hold European government bonds.

<sup>16</sup> See Directive 2006/48/EC, Article 113, Paragraph 3a.

<sup>17</sup> See COM (2011) 452, Part III, Article 384.

<sup>18</sup> The exception for government bonds also covers the limiting of large exposures to the higher value of either 25 percent of eligible capital or 150 million Euros, as modified in CRD IV. See Directive 2006/48/EC, Article 389, Paragraph 1a.

<sup>19</sup> See: ECON/7/07784, Article 109, Paragraph 4a.

<sup>20</sup> COM (2011) 452, Part I, Recital 74.

<sup>13</sup> See D. Schäfer, "Banken: Leverage Ratio ist das bessere Risikomaß," Wochenbericht des DIW Berlin, no. 46 (2011).

<sup>14</sup> See Directive 2006/48/EC, Article 108.

<sup>15</sup> See Directive 2006/48/EC, Article 111, Paragraph 1.

## Breaking the Diabolic Loop

According to the presented evidence, the special regulatory treatment of government debt allows for immense concentrations of risk in the European banking sector. To reduce the likelihood of crises for both banks and governments, a departure from current regulatory practice is urgently needed. In particular, any future reform of EU banking regulations should address the home bias problem.

The systematic downplaying of credit default risk by EU Member States could already be repealed within the Basel regulatory framework. Basel II and III and the IRB approach to assessing credit and market risks already allow for risk weights derived from default risk. These would also directly affect government bonds. Certainly, the exemption rule that allows banks to exclude their government bond portfolios from internal credit ratings and apply a zero risk weighting to them should be removed.<sup>21</sup> At least in currently over-indebted EU Member States, differentiated risk weights and corresponding capital requirements would create a direct incentive to diversify risks in government bond portfolios.<sup>22</sup> At the same time, such measures could send a clear signal: Since government debt within the EU and, in particular, the Euro area would no longer be treated as risk-free, the base for market expectations of an implicit bailout guarantee for these securities would erode.

Skeptics of such risk differentiation argue with good reason that default risk on government liabilities is much more difficult to determine in practice than that of private counterparties.<sup>23</sup> Moreover, it does not represent an effective means of containing home bias in countries with very good credit ratings. An effective complementary measure would be to abolish the special treatment of government debt in the large exposure regime. Limiting government debt exposures to 25 percent of own funds would affect virtually all European banking sectors and include a ceiling for home bias. This would be

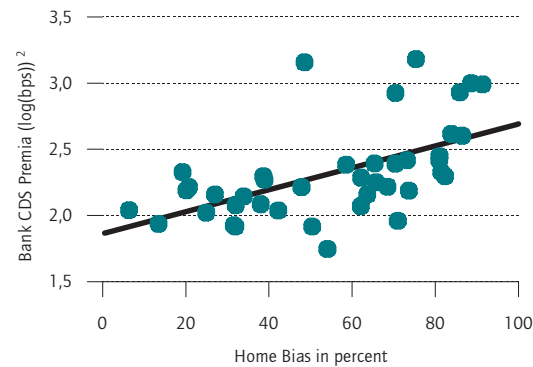
<sup>21</sup> See H. Hannoun (Deputy General Manager of the Bank for International Settlements), "Sovereign Risk in Bank Regulation and Supervision: Where Do We Stand?," speech held at Financial Stability Institute High-Level Meeting, Abu Dhabi, UAE, October 26, 2011.

<sup>22</sup> For a detailed discussion of the impact of different risk weights on the affected economies, see M. Kager, "The Interaction Between Sovereign Debt and Risk Weighting under the CRD as an Incentive to Limit Government Exposures," in *The Interaction Between Sovereign Debt and Risk Weighting Under the Capital Requirements Directive (CRD) – as an Incentive to Limit Government Exposures* (Policy Department Economic and Scientific Policies, European Parliament, 2010).

<sup>23</sup> See B. Frohn, "The Interaction between Sovereign Debt and Risk Weighting Under the Capital Requirements Directive (CRD)," in *The Interaction Between Sovereign Debt and Risk Weighting Under the Capital Requirements Directive (CRD) – as an Incentive to Limit Government Exposures* (Policy Department Economic and Scientific Policies, European Parliament, 2010).

Figure 5

### Home Bias and Bank Risk<sup>1</sup>



<sup>1</sup> Correlation between premia for credit default swaps (CDS) on 5-year bonds and the home bias of the respective stress-test bank.

<sup>2</sup> Basis points as logarithmic function.

Sources: EBA 2011 Stress Test, December 31, 2012, Datastream; calculations by DIW Berlin.

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Distortion of government debt portfolios towards the home country increases default risk of individual banks.

more in line with the spirit of the European Parliament's call to limit exposures to individual countries.

Deeper intervention into the government bond portfolios of European banks might successfully separate sovereign and bank risk in the EU. Banks could be forced to regionally diversify their portfolios through direct controls. Thus, the volume of claims on domestic central government and subsidiary administrative levels could be kept specifically below the large exposure regime, keeping home bias in check. A supranational institution such as the EBA should monitor compliance with these requirements to ensure the banks of all Member States are treated equally, which is vital, not least for maintaining the idea of a European internal market. However, such an approach would probably involve considerable bureaucratic effort.

The risk of twin crises in individual single-currency countries could be prevented more effectively if only government bonds without country-specific risk were recognized as low-risk and highly liquid assets. The crucial factor would be that these investments are issued jointly by all Member States. Joint liability would, however, not be a necessary condition. Such commonly issued but not commonly guaranteed bonds would be something like the European Safe Bonds (ESBies).<sup>24</sup>

<sup>24</sup> See Euronomics (September 2012): <http://euro-nomics.com/http://euro-nomics.com/2011/european-safe-bonds/>.



Undoubtedly, commonly guaranteed bonds, such as exposures to the European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM), Euro Bonds, or Blue Bonds<sup>25</sup> would have the advantage of being independent of country-specific risk. However, the benefit of commonly guaranteed bonds would have to be thoroughly weighed up against the costs and possible disincentives of common debt.<sup>26</sup> The charm of a regulatory preference for or even a restriction on country-independent bonds in bank portfolios derives mainly from their compatibility with any scenario of public financing in the Euro area which envisages commonly issued government bonds. At the same time, Member States would be deprived of the possibility to push their respective banking sectors towards the financing of current budget deficits.

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<sup>25</sup> See Bruegel (May 2010): <http://www.bruegel.org/publications/publication-detail/publication/403-the-blue-bond-proposal/>.

<sup>26</sup> A detailed discussion of the risks and institutional challenges en route to a debt Community would, however, go beyond the scope of this article.



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