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## The rise of sovereign credit risk: implications for financial stability<sup>1</sup>

*The financial crisis and economic recession, and policymakers' responses to these events, have raised sovereign risk concerns in a number of advanced economies. This has increased the cost and reduced the stability of funding for banks. It has also meant that decisions about the maturity of government debt have become important to the dynamics of systemic financial distress. This article looks at the financial stability issues involved, drawing from two recent studies by the Committee on the Global Financial System (CGFS). A return to sustainable government finances over the medium term is fundamental to managing current difficulties. Banks improving their funding and asset risk management, lengthening of government debt maturities and sound banking regulation are also important. And the different policy agencies involved need to ensure that they are aware of each other's objectives and operational plans, while maintaining clear lines of accountability.*

*JEL classification: E58, E60, E61, G21.*

The financial crisis and global recession, and policymakers' responses to these events, have had significant, and probably long-lasting, effects on the global economy and financial markets. Markedly reduced growth prospects and sharply increased public debt in several advanced countries have heightened concerns about sovereign credit and liquidity risk, posing a considerable challenge to banking systems and financial stability. These developments, together with very low short-term interest rates and large-scale purchases of assets (including sovereign debt) as instruments of monetary policy, have also increased the interactions between sovereign debt management (SDM) and central banking.

Two important questions in the current policy debate are: (i) how sovereign risk is affecting bank funding conditions; and (ii) how sovereign debt management choices, about maturity in particular, can affect monetary and financial conditions and the propagation of financial stress more generally.

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<sup>1</sup> The analysis in this article is based on data available up to June. See pages 1–13 for subsequent events in sovereign bond markets. The views expressed here are those of the authors, and not necessarily those of the CGFS or the BIS. We are grateful to Claudio Borio, Maria Canelli, Stephen Cecchetti, Dietrich Domanski, Ingo Fender, Paul Fisher, Fabio Panetta, Philip Turner and Christian Upper for useful comments on earlier drafts of this article, and to Gabriele Gasperini for able research assistance.

These questions were part of two recent in-depth studies by the Committee on the Global Financial System (CGFS).<sup>2</sup> This article discusses the key findings. More detail is available in the published reports (CGFS (2011a, 2011b)).<sup>3</sup>

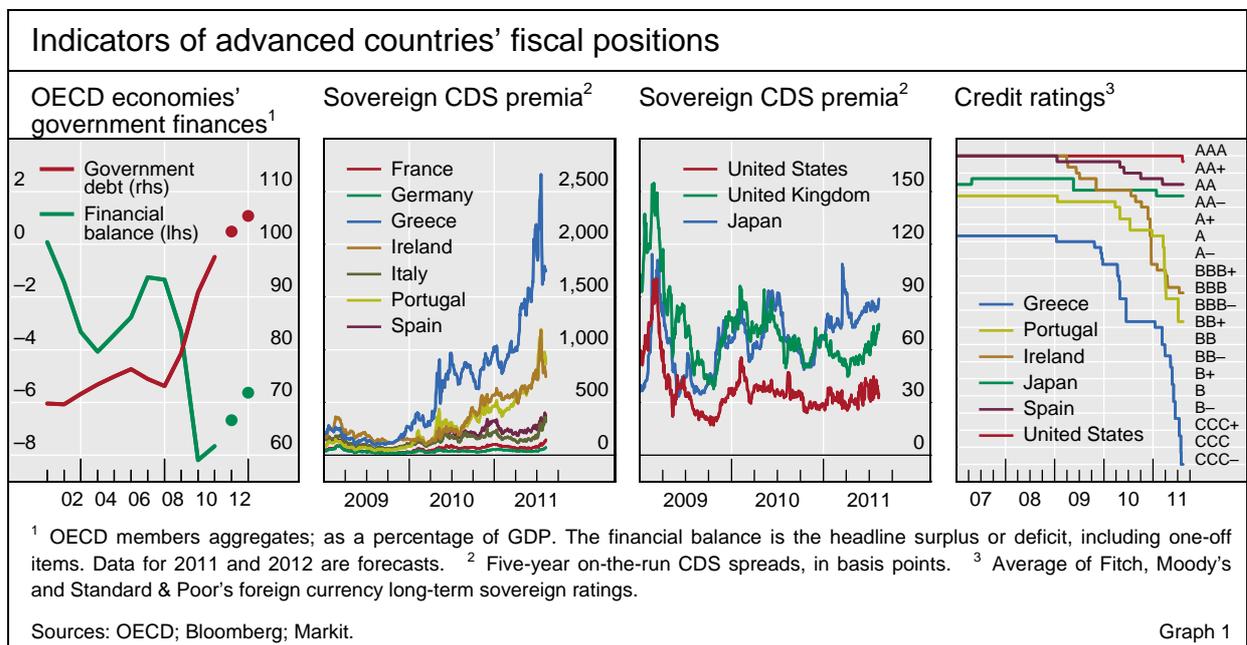
In the first section of this article, we discuss the rise of sovereign risk in advanced countries. In the second, we explain its negative impact on bank funding conditions. The third section examines how sovereign debt management choices about maturity have become more important under the current strained circumstances. Lastly, we discuss some implications for banks and policymakers.

## The rise of sovereign risk in advanced countries

The financial crisis and global economic downturn have put significant pressure on public finances in several advanced economies. Fiscal deficits have widened markedly, reflecting the effects of automatic stabilisers, discretionary stimulus measures and official sector support to the financial sector. Between end-2007 and end-2010, average budget deficits in OECD countries increased from 1% to 8% of GDP and gross government debt rose from 73% to 97% of GDP (Graph 1, left-hand panel).

Public finances are under significant pressure in many advanced countries

Sovereign debt stress has been particularly acute in the euro area. Greece, Ireland and Portugal received international official assistance after they were unable to raise funding without offering unsustainably high interest



<sup>2</sup> The CGFS is a central bank forum that monitors broad issues relating to financial markets and systems and develops appropriate policy recommendations. The CGFS places particular emphasis on assisting Governors in recognising, analysing and responding to threats to the stability of financial markets and the global financial system.

<sup>3</sup> The report on *The impact of sovereign risk on bank funding conditions* was prepared by a Study Group chaired by Fabio Panetta (Bank of Italy). The report on *Interactions of sovereign debt management with monetary conditions and financial stability* was prepared by a Study Group chaired by Paul Fisher (Bank of England). Both reports are available at [www.bis.org/list/cgfs/index.htm](http://www.bis.org/list/cgfs/index.htm).

rates. Some other countries have seen their debt spreads increase significantly as a result of investor concerns about their fiscal conditions (Graph 1, second panel from left).

The resulting higher sovereign risk could persist for some time

Without credible plans to restore long-term fiscal sustainability, sovereign debt in several euro area and other advanced countries may no longer be regarded as having zero credit risk. Japan and the United States were downgraded in 2011, but, to date, their sovereign CDS premia have not risen materially (Graph 1, third and fourth panels from left). And in many advanced economies, government debt levels are expected to continue to rise over coming years, due to high fiscal deficits and rising pension and health care costs. Moreover, the level of economic output, which underpins debt servicing capacity, is unlikely to return to its pre-crisis trend any time soon.<sup>4</sup> Sovereign risk premia could thus be persistently higher and more volatile in the future.

### Impact of sovereign risk on bank funding

While financial institutions have always needed to contend with market risk on sovereign debt due to changing interest rate expectations, sovereign credit risk and its implications now pose a significant and urgent challenge to banks.<sup>5</sup> These challenges are particularly acute when it is a bank's home sovereign that is in distress.<sup>6</sup> A deterioration in sovereign creditworthiness drives up banks' funding costs and impairs their market access through multiple channels (see below). Moreover, due to the extensive role of government securities in the financial system, banks cannot fully insulate themselves from higher sovereign risk by changing their operations.

Heightened sovereign risk negatively affects banks' funding ...

The rise in sovereign risk since late 2009 has increased the cost of banks' funding, and in some cases reduced their market access. The extent of the impact on banks is broadly in line with the perceived deterioration in the creditworthiness of the home sovereign. Banks from Greece, Ireland and Portugal have seen their CDS premia rise to extremely high levels, their issuance of short-term wholesale debt fall sharply and, in two cases, their deposits drain (Graph 2).<sup>7</sup> As a result, they have become much more reliant on central bank liquidity. The increase in the cost of wholesale funding has spilled over to other European banks, although to a much lesser extent. Banks in other

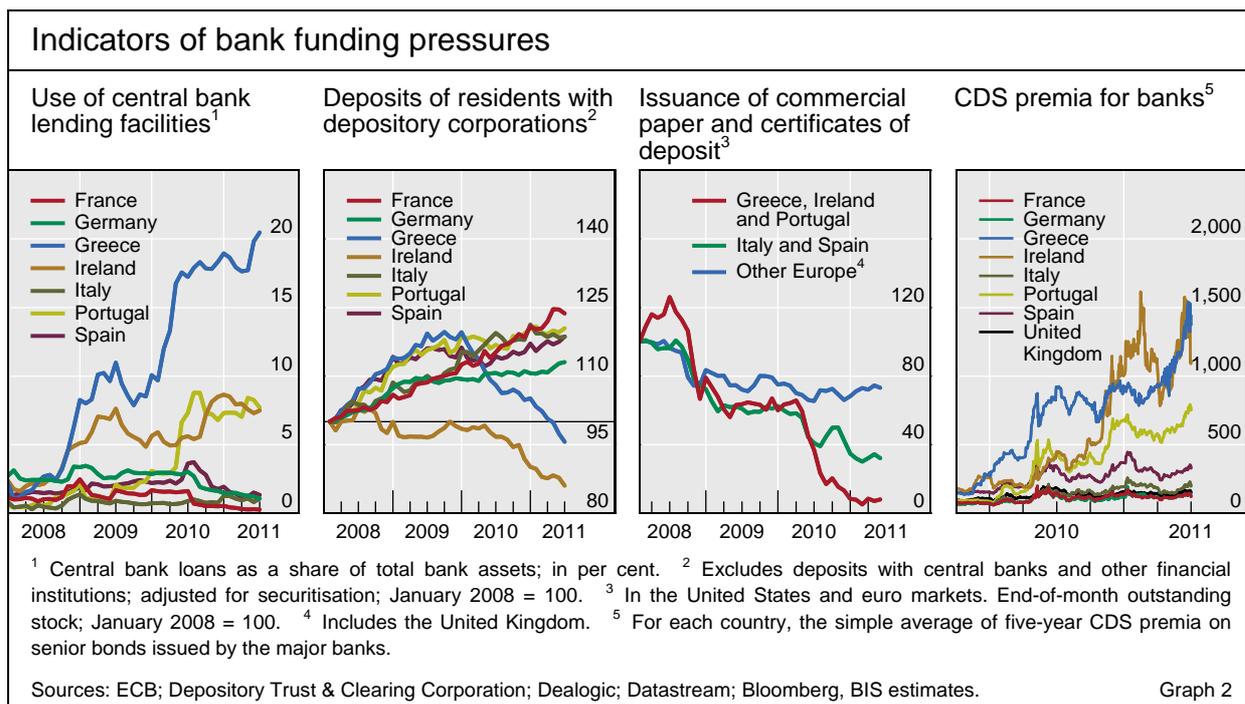
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<sup>4</sup> History shows that systemic banking crises often cause long-lasting, possibly permanent output losses relative to trend. In the current period, the destruction of human capital due to long-term unemployment, and the need to shrink the finance and construction sectors in some economies, may weigh on economic growth for years to come (BIS (2011)).

<sup>5</sup> Some implications for insurance companies and pension funds are discussed in another recent CGFS report (CGFS (2011c)).

<sup>6</sup> The home sovereign refers to the country in which the bank is headquartered.

<sup>7</sup> The driver of the increase in sovereign risk differs across these countries – for example, in Greece the financial crisis has exacerbated an already weak fiscal position, while in Ireland the government's fiscal position was considered strong before the crisis but has been severely affected by the cost of supporting banks. Nonetheless, even where the original causality went from banks to the sovereign, sovereign risk has reached the point where it is compounding the problems in the banking sector.



major advanced economies have experienced only modest changes in their wholesale funding costs.

#### *Channels through which sovereign risk affects bank funding conditions*

There are four main channels through which a deterioration in sovereign creditworthiness adversely affects banks' funding costs and market access: direct losses on sovereign holdings, lower collateral values for wholesale and central bank funding, reduced funding benefits from government guarantees and depressed bank credit ratings.<sup>8</sup>

... through several different channels ...

First, increases in sovereign risk cause losses on banks' government bond holdings, thereby weakening their balance sheets. A decrease in the creditworthiness of the home sovereign is particularly damaging, as banks often have large exposures to them (Graph 3, left-hand panel). Banks also typically have a strong home bias in their sovereign portfolios – for example, European banks' domestic sovereign holdings (as a share of their total EU sovereign holdings) are many times larger than their home country's share of aggregate sovereign debt in the EU (Graph 3, centre panel). The available data suggest that banks also hold significant quantities of debt issued by foreign sovereigns – exposures to the public sector in foreign countries are largest for Swiss, Belgian and Canadian banks (Graph 3, right-hand panel). Foreign (on-balance sheet) claims on the public sectors of countries most severely affected by the current sovereign debt tensions are significantly smaller, but sometimes non-negligible. Relatedly, increases in sovereign risk can also depress the mark to market value of banks' OTC derivatives positions with the

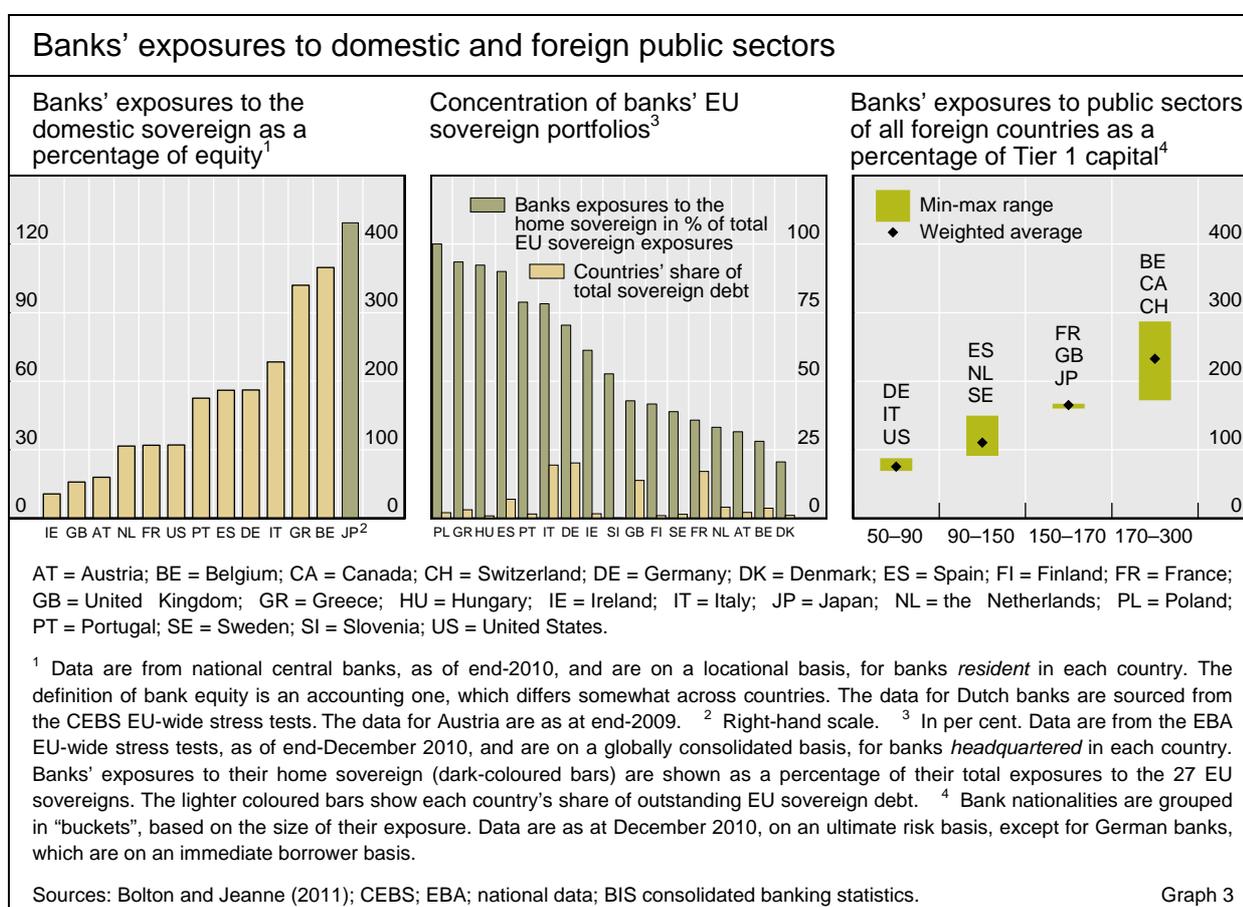
... such as direct balance sheet losses ...

<sup>8</sup> The CGFS report on the impact of sovereign risk on bank funding conditions also briefly examines other potential channels of contagion from sovereigns to banks, such as investors' risk aversion, banks' non-interest income and international spillovers (CGFS (2011b)).

affected sovereigns.<sup>9</sup> Anecdotal evidence suggests that these positions are sizeable.

... reduced collateral for wholesale funding ...

Second, falls in the market prices of sovereign bonds due to a deterioration in sovereign creditworthiness reduce the value of the collateral that banks can use to secure wholesale funding, and can trigger margin calls from counterparties. In private repo markets, sovereign debt accounts for the majority of collateral, and participants are sensitive to changes in its riskiness. Ratings downgrades, if large enough, can exclude a government's bonds from the pool of eligible collateral. Also, counterparties may materially increase the haircuts applied to sovereign securities.<sup>10</sup> During the current sovereign debt crisis in the euro area, the share of transactions in European repo markets collateralised by Greek, Irish and Portuguese government bonds in the second



<sup>9</sup> Banks record OTC derivatives transactions that have a positive market value at a lower than face value on their balance sheets to reflect the counterparty risk inherent in these positions (this is referred to as credit valuation adjustment (CVA)). Increases in sovereign risk result in higher CVAs and a reduction in the market value of banks' derivatives transactions, and are reported as mark to market losses on the banks' income statements. The impact on banks is most severe when sovereigns use unilateral credit support annexes, rather than bilateral ones.

<sup>10</sup> Sovereign bonds usually have minimal haircuts, reflecting their low perceived credit risk, high liquidity and ease of valuation.

half of 2010 was less than half that in 2009, and market haircuts have risen to very high levels.<sup>11</sup>

Sovereign debt is also widely used as collateral in central bank operations. The share of sovereign bonds in total collateral ranges from about 15% in the euro area and United States, to 70% in the United Kingdom and 95% in Japan. Over the past two years, banks from Greece, Ireland and Portugal have increased their use of Eurosystem liquidity and made greater use of domestic government bonds to collateralise this funding. This was permitted by modifications to the Eurosystem collateral rules.<sup>12</sup> This Eurosystem funding was important in easing funding pressures on banks, and prevented a severe credit crunch in the affected countries, but has transferred credit risk to central banks.

Third, a deterioration in the creditworthiness of the sovereign reduces the funding benefits that banks derive from government guarantees, be they explicit or perceived.<sup>13</sup> Rating agencies' assessment of the value of implicit support provided to banks by the weaker euro area countries has decreased noticeably since late 2009 to low levels; for instance, it has fallen by eight notches for Ireland and two to three notches for Portugal (Graph 4, left-hand panel).<sup>14</sup> However, for the major advanced economies in Europe and elsewhere, the level of implicit support is little changed.<sup>15</sup> Similarly, the value of explicit government support for banks (measured by the spread between the yields on a bank's government-guaranteed and non-guaranteed senior bonds) tends to be higher in triple-A rated countries, such as Germany and the United Kingdom, than in non-AAA countries.

... and reduced  
funding benefits  
and credit ratings

Fourth, sovereign downgrades often flow through to lower ratings for domestic banks, thereby raising their wholesale funding costs and possibly reducing their market access. This is because banks are more likely than other sectors to be affected by sovereign distress. Only 2% of domestic banks across seven non-AAA European countries had a credit rating that was higher than that of their respective sovereign at end-2010. Moreover, in five advanced

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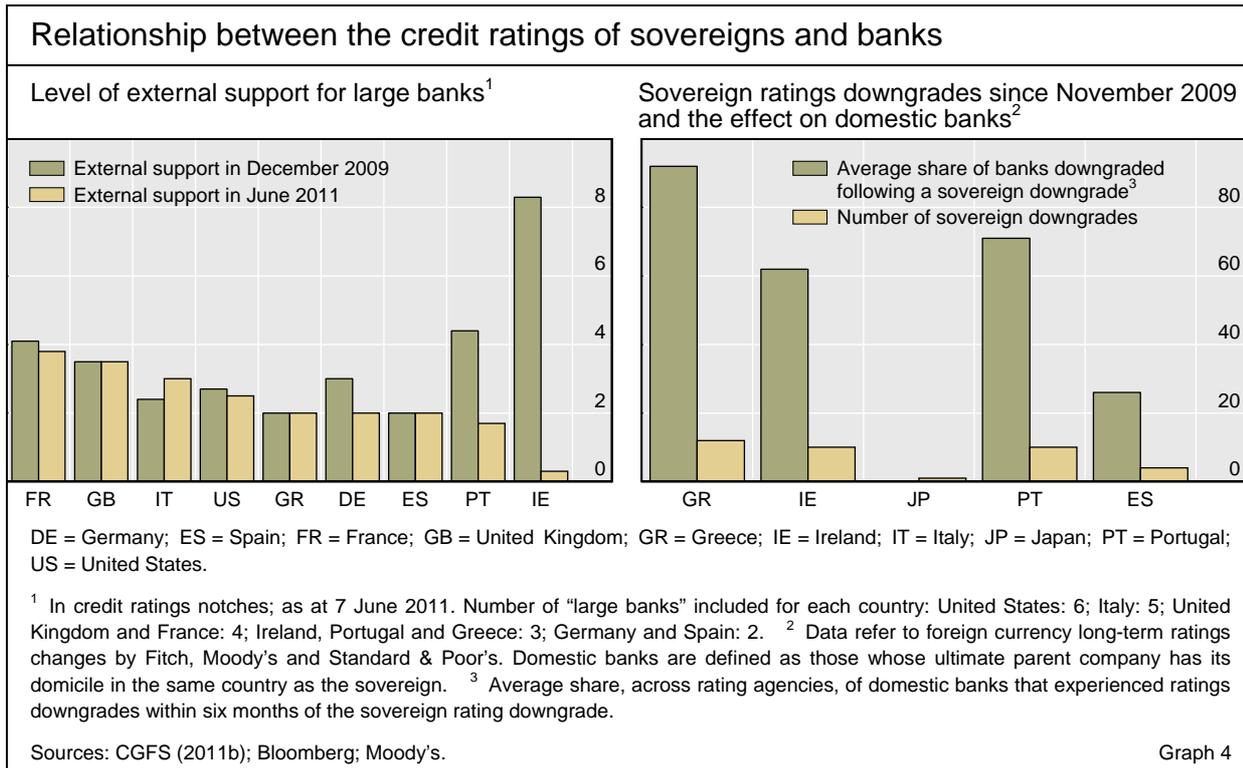
<sup>11</sup> For instance, LCH.Clearnet, a leading European clearing house, had increased the haircuts on Irish and Portuguese government bonds to 75% and 65%, respectively, by June 2011.

<sup>12</sup> The Eurosystem suspended the application of the minimum credit rating threshold for securities issued or guaranteed by governments of countries that had obtained international financial support and adopted a fiscal consolidation plan approved by the European Commission and the IMF, in liaison with the ECB (ECB (2010, 2011a, 2011b)).

<sup>13</sup> These funding benefits can be sizeable (see the Vickers Report (ICB (2011)), Haldane (2010) and Baker and McArthur (2009)), and so their loss is always negative for banks. However, it is not necessarily negative for the economy as a whole.

<sup>14</sup> Implicit government support for banks is proxied by the difference between the "issuer rating" (the overall rating, which takes into account the likelihood of government or group support if a bank is in trouble) and the standalone rating, which reflects only the bank's intrinsic strength (Moody's (2007)).

<sup>15</sup> Since mid-2007, the major advanced economies have generally increased their support for banks, as they tried to mitigate the impact of the financial crisis (CGFS (2011b)). See also Packer and Tarashev (2011) for a more detailed discussion of bank credit ratings and the role of government support.



countries that have experienced ratings downgrades since late 2009, two thirds of domestic banks have had their credit ratings lowered within the six months following a sovereign downgrade (Graph 4, right-hand panel). This relationship is strongest in countries where the sovereign has been downgraded significantly.

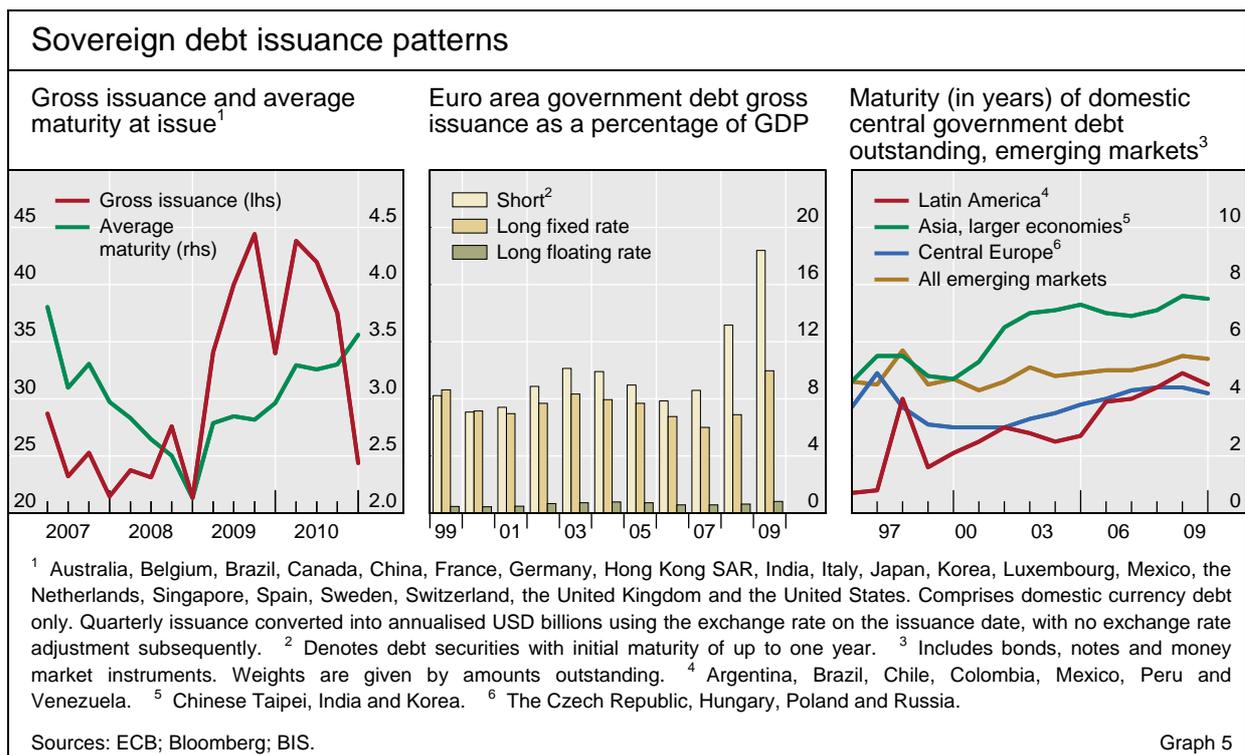
### The role of sovereign debt management choices about maturity

Sovereign debt management choices affect sovereigns' liquidity risk

The impact of sovereign credit risk on the level and volatility of sovereign bond yields, and hence financial volatility more generally, can be exacerbated by SDM choices about maturity, which affect the sovereign's liquidity risk. Through their decisions about maturity and other features of government bonds, debt managers aim to minimise the medium- to long-term expected cost of funding the government's activities, subject to prudent risk management. The current environment has amplified the financial stability consequences of SDM decisions about maturity in particular.

During the crisis, the average maturity of new issues shortened materially

Sovereign debt managers appear to have been aware of the risk consequences of their choices as the global financial turmoil unfolded. The extreme market conditions and sudden funding needs for advanced country sovereign issuers that emerged at the end of 2008 markedly shifted the apparent trade-offs between cost and risk. The world's major issuers, including in the euro area, had on average been shortening the average maturity of their new issues up until that point. As the crisis intensified, they increased it on average (Graph 5, left-hand and centre panels). Some highly rated issuers continued to issue at quite short maturities, perhaps perceiving such borrowing to have become more attractive on cost grounds. Some issuers might also have considered the sudden crisis-related financing needs to be temporary. In



general, though, the subsequent increase in maturity suggests that issuers were conscious of the increased rollover risk associated with persistent short-maturity issuance.

In emerging market economies (EMEs), several years' success in strengthening fiscal positions and debt managers' efforts to deepen and diversify government debt investor bases, particularly for long-term domestic currency debt (Graph 5, right-hand panel), helped limit the disruption during the crisis. These economies were able to restore regular public and private sector issuance on reasonable terms fairly quickly, after interruptions of only a few months during the crisis.

In economies that have used large-scale purchases of government debt as part of unconventional monetary policy, such as the United States, the United Kingdom and Japan, SDM choices may have further significance for financial conditions because of their potential interaction with monetary policy implementation. If debt managers and monetary authorities both operate in large scale in the government debt markets, they need to ensure that their operational plans do not conflict (see box).

Increased debt issuance does not seem to have impeded unconventional monetary policy from easing monetary conditions

## Conclusions for banks and policymakers

### *Banks' options for mitigating the impact of increased sovereign risk*

Banks can reduce the effects of rising sovereign credit and liquidity risk by changing their operations, but there are trade-offs in doing so. On the assets side, if sovereign debt is no longer risk-free, banks might further diversify the country composition of their sovereign debt portfolios to reduce their overexposure to their home sovereign. However, for some banking systems,

Banks can mitigate, but not eliminate, the impact of sovereign risk

this may imply a trade-off between sovereign risk and liquidity risk (as foreign sovereign debt may not be eligible to satisfy liquidity standards or as collateral in central bank repurchase agreements).

On the funding side, banks can protect themselves against periodic bouts of (sovereign-induced) investor risk aversion by holding additional capital, making greater use of stable funding sources and diversifying the timing and the jurisdiction of their debt issues.<sup>16</sup> However, this may entail higher absolute funding costs – although banks would still minimise “risk-adjusted” funding costs.

Overall, it is clear that banks can mitigate, but not eliminate, the impact of sovereign credit risk, due to the extensive role of government securities in the financial system.

The first policy priority is to ensure sound public finances

#### *Implications for policymakers*

The first and foremost task for policymakers to minimise the impact of sovereign risk is to ensure sound public finances. It is very difficult to protect

### Sovereign debt management and monetary conditions

The relative supply of government bonds can affect interest rates if arbitrage is imperfect. Such imperfections, or “preferred habitat” effects, can arise from investors looking to match the duration or other risk characteristics of their liabilities.<sup>①</sup> These effects are likely to be especially relevant under the current strained circumstances, with financial weakness and uncertainty, including about interest rates themselves, limiting market participants’ willingness or ability to take risk and to arbitrage. Evidence suggests that such effects are generally small, but significant.<sup>②</sup>

Central banks using large-scale government bond purchases to lower long-term interest rates may thus need to take account of increased government debt issuance, and of debt management operations shifting the relative supply of securities. In recent years, central bank asset purchases and increased government debt issuance have been of roughly the same magnitude. However, in practice, unconventional monetary policy seems to have achieved its objective of easing monetary conditions, without being materially impeded by any yield effects of government issuance (see, for example, Gagnon et al (2010)).<sup>③</sup>

This probably reflects two factors. First, (non-sterilised) central bank asset purchases increase the monetary base, whereas government debt issues usually fund spending or the maturation of existing debt, leaving the monetary base unchanged overall. Second, the agencies’ communications, bolstered by clear institutional separation, strongly signalled their distinct policy intentions and objective functions. The monetary authorities emphasised price or macroeconomic stability, and the debt managers focused on steady and predictable issuance.

When central banks come to sell the government debt they hold, they will operate on the same side of the market as debt managers. This could amplify the impact on yields, although the gradual return of normal arbitrage and risk appetite may reduce this effect somewhat. The respective agencies will again need to communicate their objectives and ensure their respective operational plans are clearly understood.

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<sup>①</sup> See the discussion in, for example, McCauley and Ueda (2009) and Turner (2011). <sup>②</sup> See eg Swanson (2011). <sup>③</sup> See Borio and Disyatat (2010) for a discussion of the different channels by which unconventional monetary policy can act on monetary conditions.

<sup>16</sup> By issuing debt in different jurisdictions through subsidiaries, banks can potentially benefit from support, either explicit or perceived, from multiple sovereigns.

the banking system from the extreme interest rate, balance sheet and funding uncertainties caused by a distressed domestic sovereign. By moving quickly to implement credible strategies to stabilise debt burdens, and in some countries, to improve transparency about overall public debt levels, governments can address the root causes of the problem. Such actions are essential in anchoring market views about sovereign risk and avoiding unnecessary volatility and negative spillovers to banks.

Debt managers can help to minimise the risk of sudden shocks to government funding and the associated financial volatility by lengthening and spreading maturities and also by avoiding large, concentrated placements. In the euro area, awareness of the connection between government debt rollover risks and financial volatility has led to a commitment to lengthen maturities.<sup>17</sup> A recent forum of debt managers and central banks from 33 advanced and emerging market countries also emphasised better communication and risk mitigation in a set of principles for managing sovereign debt in the context of market turbulence (IMF Forum (2010)). Principle 6 is that “Communication among debt managers and monetary, fiscal, and financial regulatory authorities should be promoted, given greater inter-linkages across objectives, yet with each agency maintaining independence and accountability for its respective role”. This principle recognises that medium-term maturity structure and risk targets matter for financial conditions and financial stability, and that all public agencies operating in government debt markets need to ensure their objectives are well understood.

Given the challenges for fiscal policy, supervisors and central banks need to prepare for the likelihood of a sustained period of higher and more volatile sovereign risk premia.<sup>18</sup> Bank supervisors may need to closely monitor the interaction of sovereign risk with regulatory policies that encourage banks to hold large quantities of public debt. Also, when risk aversion is high, and uncertainty about individual banks’ assets (including their sovereign portfolios) creates funding pressures for all banks, coordinated ad hoc disclosures of banks’ sovereign exposures may be beneficial.

More flexible operational frameworks that, during severe crises, allow central banks to supply funding to banks against a broad range of collateral would help ease immediate liquidity pressures. However, this is not costless – it shifts credit risk to the central bank and encourages moral hazard – and so should be used sparingly and with the appropriate safeguards.

Ongoing regulatory reforms that target the “too big to fail” issue are also important. They will reduce investors’ expectations of government support for banks, thereby helping to weaken the link between sovereigns and banks.

Policymakers can manage the impact of sovereign risk on financial stability by prudent sovereign funding strategies and open communication ...

... close monitoring and appropriate disclosure of banks’ sovereign exposures ...

... flexible operational frameworks ...

... and further regulatory reforms

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<sup>17</sup> In November 2010, the Eurogroup agreed that “Member States will strive to lengthen the maturities of their new bond issues in the medium-term to avoid refinancing peaks” ([www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ecofin/118050.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/118050.pdf)).

<sup>18</sup> See Carney and Panetta (2011).

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