

# Financial and real sector interactions: enter the sovereign *ex machina*

Jaime Caruana<sup>1</sup>

## Introduction

I am delighted to join Governor Subbarao and his colleagues at the Reserve Bank of India at this conference on “Financial sector regulation for growth, equity and stability in the post-crisis world”. And I would like to thank Usha Thorat, the first head of the Centre for Advanced Financial Research and Learning, for the invitation.

All credit is due to Governor Subbarao and Usha Thorat for this important initiative. One of the lessons of this crisis is our need to better understand the complex interactions between the financial system and the real economy. CAFRAL, as a centre of excellence for research and learning in banking and finance, will greatly contribute to building and sharing this knowledge. And this in turn will promote better regulation and supervision.

The Reserve Bank of India has a strong tradition of expertise and action in this area. Let me also compliment Y V Reddy, who, as Governor, conceived of a global hub for policy research that would be of practical use to policymakers, central bankers and bankers. As India’s financial sector becomes increasingly important in the global economy, it is reassuring that there is both a vision and an institution to guide its aspirations. The BIS is honoured to contribute to these efforts and co-host this international inaugural conference.

I especially appreciate the optimism in the title’s reference to the post-crisis world. Such optimism is more apparent here in Asia than in Europe.

In my remarks today, I would like to step back and consider somewhat schematically the interactions between the financial and the real sectors. As the latest events have reminded us, financial stability depends not only on the link between banks and the corporate and household sectors<sup>2</sup> but also on their links with the sovereign. The sovereign must be prepared to act as ultimate backstop for the financial system. But this requires that fiscal buffers be built up in good times. Otherwise, the sovereign can itself become a source of financial instability as its credit risk damagingly interacts with that of banks and other private sector entities.<sup>3</sup> Sovereigns must now earn back their reputation as practically risk-free borrowers. And as history has taught us, sovereign solvency is a precondition for the central bank’s success in dealing with threats to monetary and financial stability.

In what follows, I will first outline the link between the financial sector and the private sector over the financial cycle – the link that has so often been at the root of financial crises. I will then bring the sovereign into the picture. Finally, I will discuss the relationship between bank capital and growth.

---

<sup>1</sup> General Manager, Bank for International Settlements.

<sup>2</sup> The portion of the speech that discusses this link is partly based on Basel Committee on Banking Supervision, “The transmission channels between the financial and real sectors: a critical survey of the literature”, *BCBS Working Papers*, no 18, February 2011 ([www.bis.org/publ/bcbs\\_wp18.htm](http://www.bis.org/publ/bcbs_wp18.htm)).

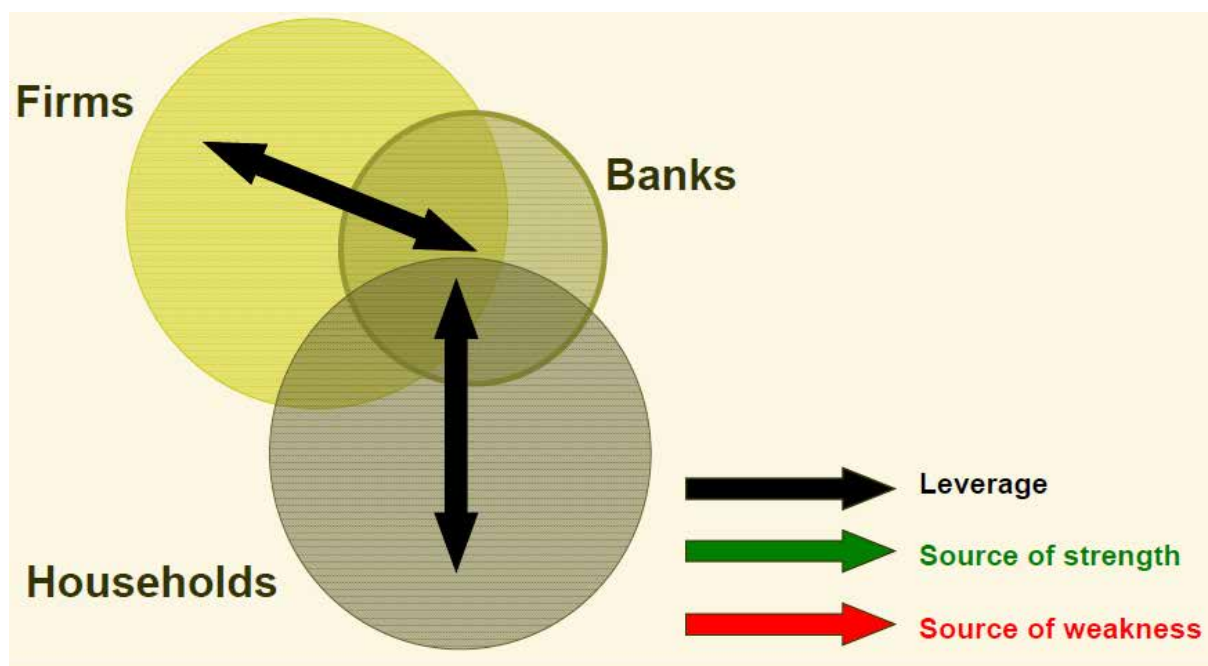
<sup>3</sup> This is further elaborated in Committee on the Global Financial System, “The impact of sovereign credit risk on bank funding conditions”, *CGFS Publications*, no 43, July 2011 ([www.bis.org/publ/cgfs43.htm](http://www.bis.org/publ/cgfs43.htm)).

## Financial-real sector interactions: business and/or household debt crises

Let us consider first the interactions between the financial system and the business and household sectors in the boom phase of a financial cycle. In Graph 1, the black arrows point in both directions. This indicates that, even as the flow of bank credit is leveraging up those sectors, the banking system is leveraging itself up in the process of extending credit. Several mechanisms are at work in this phase.

Graph 1

### Boom in corporate and/or household lending



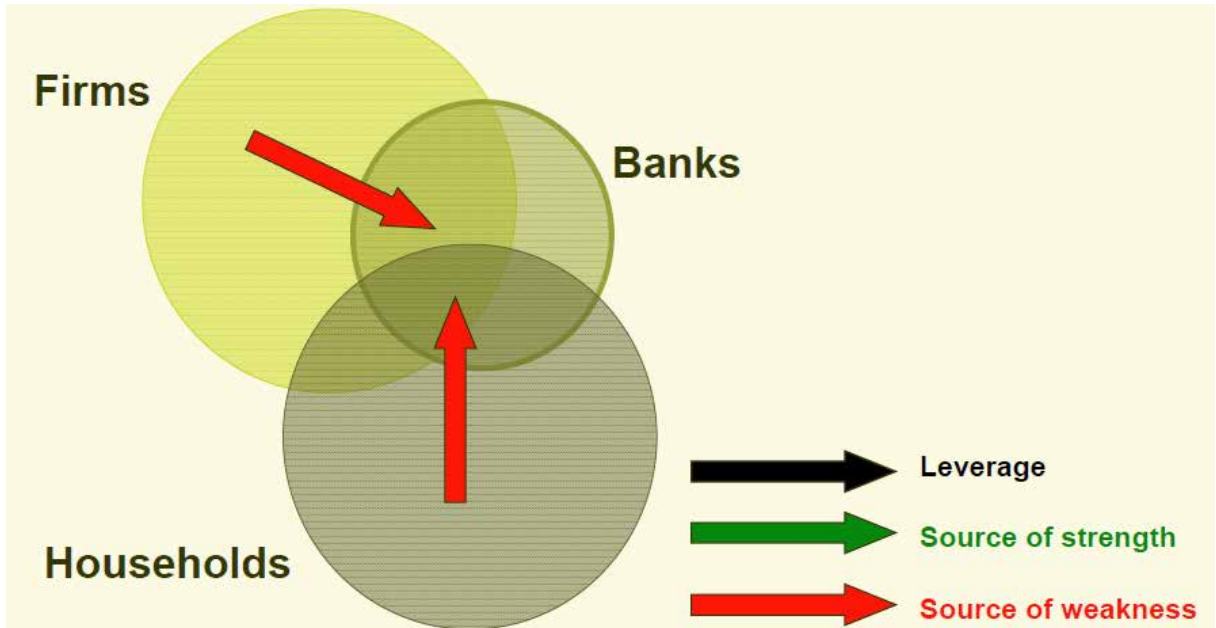
From the borrower side, stronger demand and income as well as higher asset prices tend to cut the cost of funding. Stronger aggregate demand makes for stronger cash flows and, for businesses, it increases the abundance of internal funds, which are cheaper than externally raised funds. Higher asset prices lift the net worth of firms and households, hence easing their access to bank credit, in terms of both volume and price. More abundant cheap internal funds and greater access to external credit lower the effective cost of debt. This leads firms to invest more in structures, capital goods and inventory. Households, meanwhile, are encouraged to spend more on housing and consumer durables.

On the lender side, strong demand and higher asset prices reduce loan losses, raise profits and strengthen capital. More profitable and better capitalised banks attract wholesale funding more cheaply. And if banks hold onto assets that are rising in price, their capital gets a direct boost.

But excessive leverage leaves banks more vulnerable to any subsequent downturn in economic activity and asset prices. At the same time, they are hit with a rising tide of delinquencies and defaults. As shown in Graph 2, loan losses during the bust become a major source of weakness for banks, as indicated by the red arrows pointing from the corporate and possibly household sectors to the banks.

Graph 2

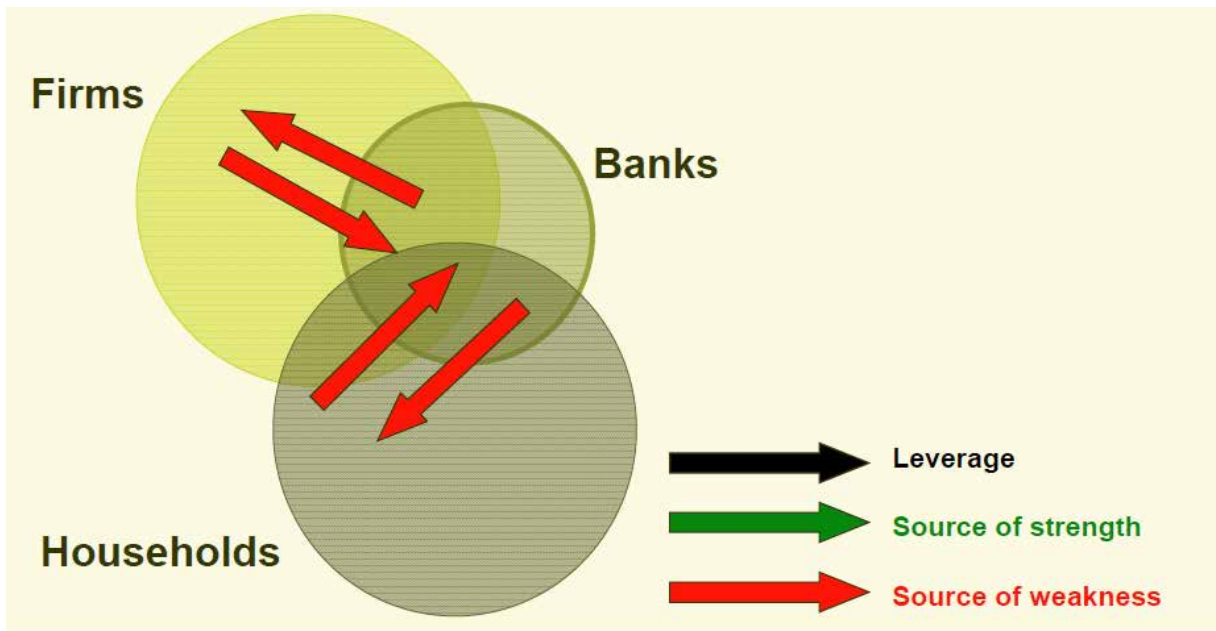
**Bust in corporate and/or household lending**



When borrower distress undermines their balance sheets, banks are prevented from extending credit even to healthy borrowers. It is this combination of weak balance sheets and capital deprivation that prevents credit from flowing. In Graph 3, this is indicated by red arrows pointing from the banking sector to the business and household sectors.

Graph 3

**Bust in corporate and/or household lending leading to credit crunch**



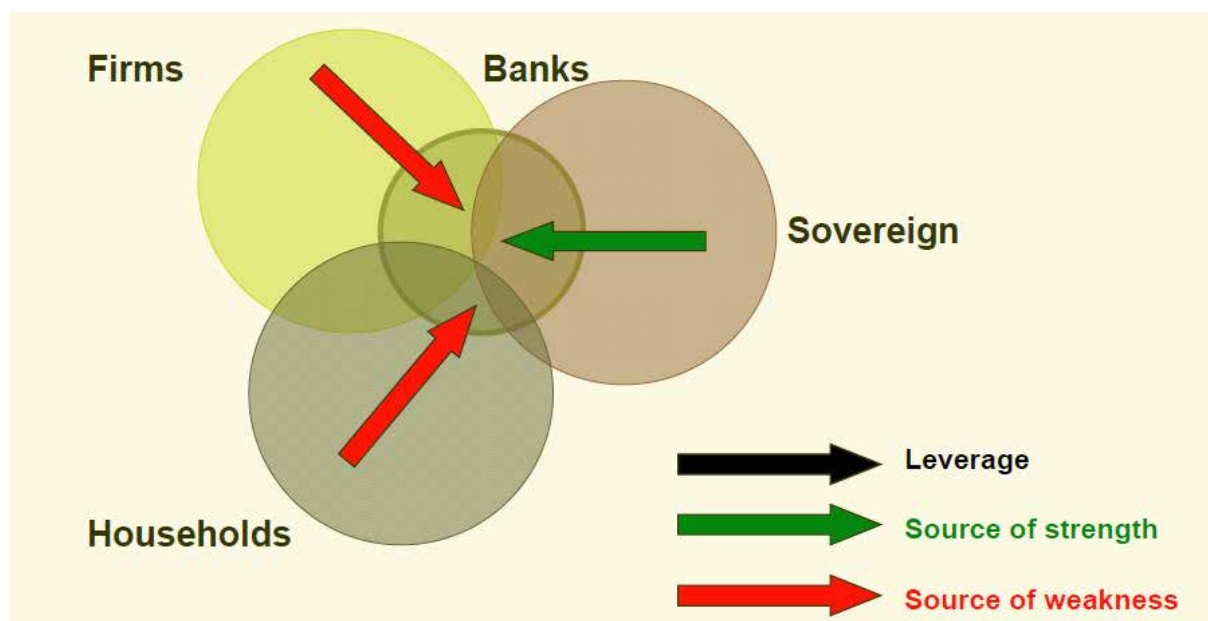
India is fortunate that the Reserve Bank took macroprudential measures in the middle of the last decade to slow the growth of household indebtedness. For several countries, indeed, the recent international crisis originated mainly in the household sector.

If the banking sector becomes a source of weakness for healthy firms and households, then the distress of these borrowers can ramify widely through the economy. Banks will find that raising external equity becomes especially difficult as problem loans escalate, not least if investors have trouble assessing the size and distribution of losses.

Under severe circumstances and in the absence of effective resolution regimes, governments may be forced to inject equity into banks. This is shown in Graph 4, where the sovereign props up the banking system. In effect, the sovereign becomes a *deus ex machina*, the supernatural intervention that resolves some ancient Greek tragedies.

Graph 4

**Bust in corporate household and/or lending leading to government recapitalisation of banks**



**Enter the sovereign**

Alas, as we have learned, the story does not end here. The sovereign and banks can prove, and have proved to be, sources of weakness for one another.

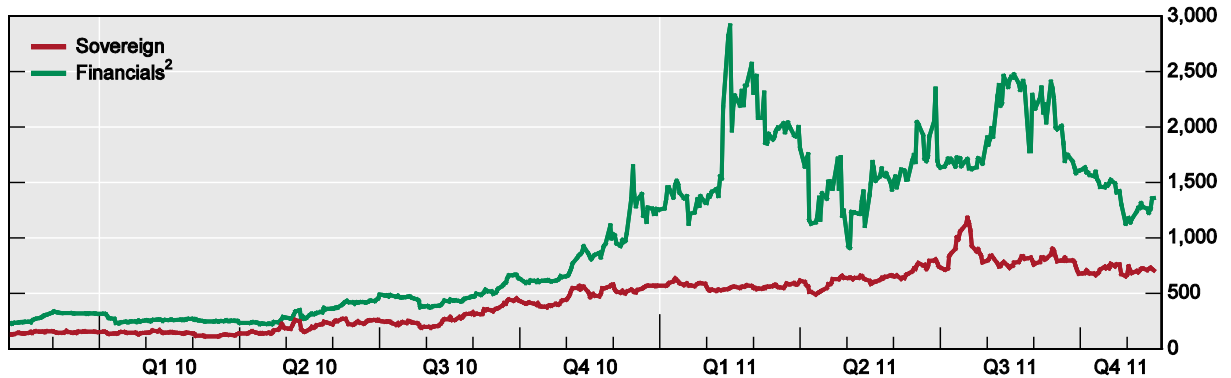
**Channels for transmission of bank risk to sovereigns**

A remarkable feature of Europe’s sovereign debt strains is the role played by sovereigns that had spent years apparently on the right side of the Maastricht criteria, keeping a prudent lid on both deficits and debt. Anyone predicting sovereign debt downgrades in 2005 would hardly have listed Ireland or Spain.

In the event, hidden weaknesses in financial sector balance sheets fed through to the sovereign. Graph 5 shows this in the case of Ireland, with a generalised version of the mechanism presented in Graph 6. There are two important transmission channels from banks to sovereigns.

Graph 5  
Irish CDS spreads<sup>1</sup>

In basis points

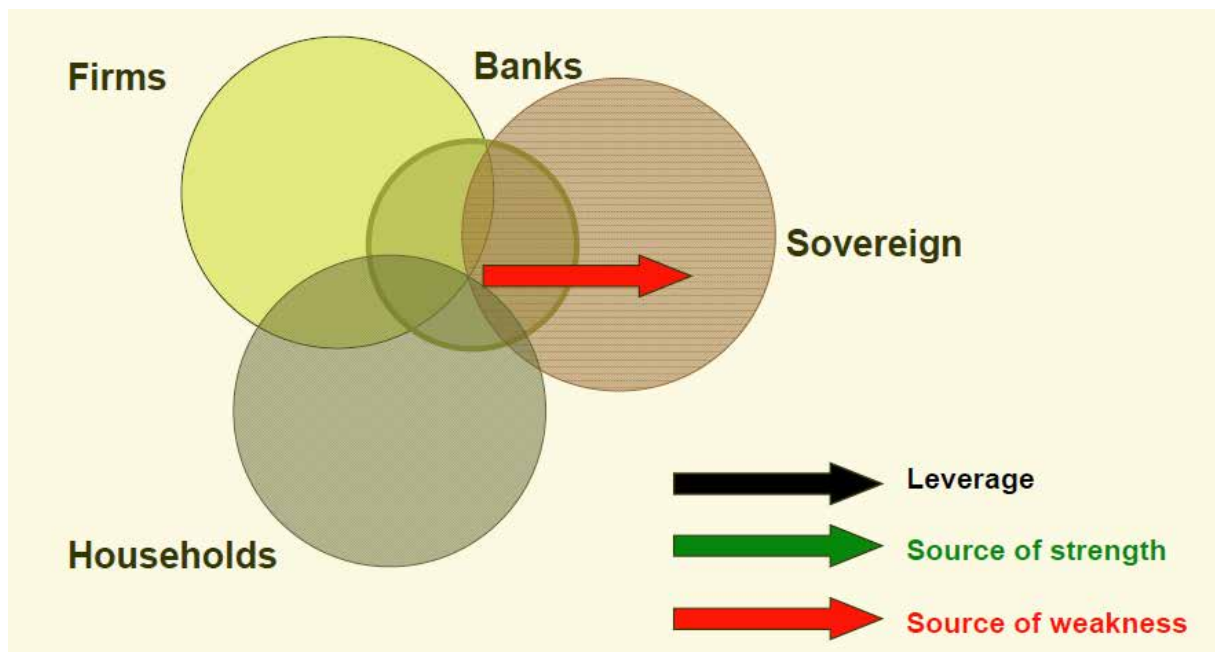


<sup>1</sup> Five-year on-the-run CDS premia. <sup>2</sup> Simple average over a sample of domestic financial institutions.

Source: Markit.

Graph 6

**Banks as source of weakness to sovereign**



First, private credit booms can flatter the public sector's accounts. In the boom phase, all sorts of unsustainable revenues temporarily improve the fiscal accounts and tempt policymakers to reduce tax rates and to increase long-term spending commitments. As Governor Honohan of the Central Bank of Ireland put it:

“The tax revenue generated by the boom came in many forms: capital gains on property, stamp duty on property transactions, value added tax on construction materials and income tax from the extra workers – immigrants from the rest of Europe, from Africa, from China, flooded in as the construction sector alone swelled up to account for about 13 per cent of the

numbers at work (about twice the current level, which is closer to what would be normal).”<sup>4</sup>

Research on Spain points in the same direction. When the boom comes to an end, these boom-related revenues fall away, revealing underlying fiscal deficits. And then when the banks run into trouble, the cost of rescuing and recapitalising them does grievous damage to the public accounts. This has important policy implications regarding the size of the fiscal space needed to prevent this situation.

Second, as described before, other less direct effects come into play as the balance sheets of banks and other financial institutions deteriorate. If institutions have failed to build up sufficient capital and liquidity buffers during the boom, credit constraints become more significant, over and above any perceived deterioration in borrower quality. This can quite unnecessarily choke off the credit supply and, unless balance sheets are repaired quickly, may lead to serious distortions in its allocation. This further dampens economic activity, thus widening the public sector deficit.

All this raises deep questions about the implications of private sector boom-bust cycles for trend output and growth.

The policy conclusion is that the sovereign must build up sufficient reserves in good times to draw on in bad times. Fiscal policy also has a macroprudential responsibility.

### **Channels for transmission of sovereign risk to the financial sector**

Of course, the sovereign can run up its own deficits and debt to the point where it becomes a source of weakness to those that hold that debt, including domestic banks. This can happen either as a result of the financial cycle I have just described, or quite independently from it. The link is shown on Graph 7.

This is a recurring story,<sup>5</sup> recently best exemplified by Greece. One can see in credit default swaps on the Greek sovereign and Greek banks how the impairment of the sovereign’s creditworthiness has affected the banks’ creditworthiness (see Graph 8).

Deterioration in the perceived creditworthiness of sovereigns can hurt the financial sector through a number of channels. I shall concentrate in a moment on the direct balance sheet exposures to the sovereign. But let me first mention the other three channels highlighted in the CGFS (“Panetta”) Report.

First, deterioration in the sovereign’s creditworthiness weakens bank balance sheets, increases counterparty risks and raises the cost of bank funding via new bond issues. It also reduces banks’ access to credit from repo and derivative markets, owing to the reduced value of government collateral.

Second, implicit or explicit government guarantees of banks and their borrowers lose value. Despite the changing policy toward systemically important institutions, the rating agencies give big banks in major countries more credit for sovereign support than they did before the crisis.

---

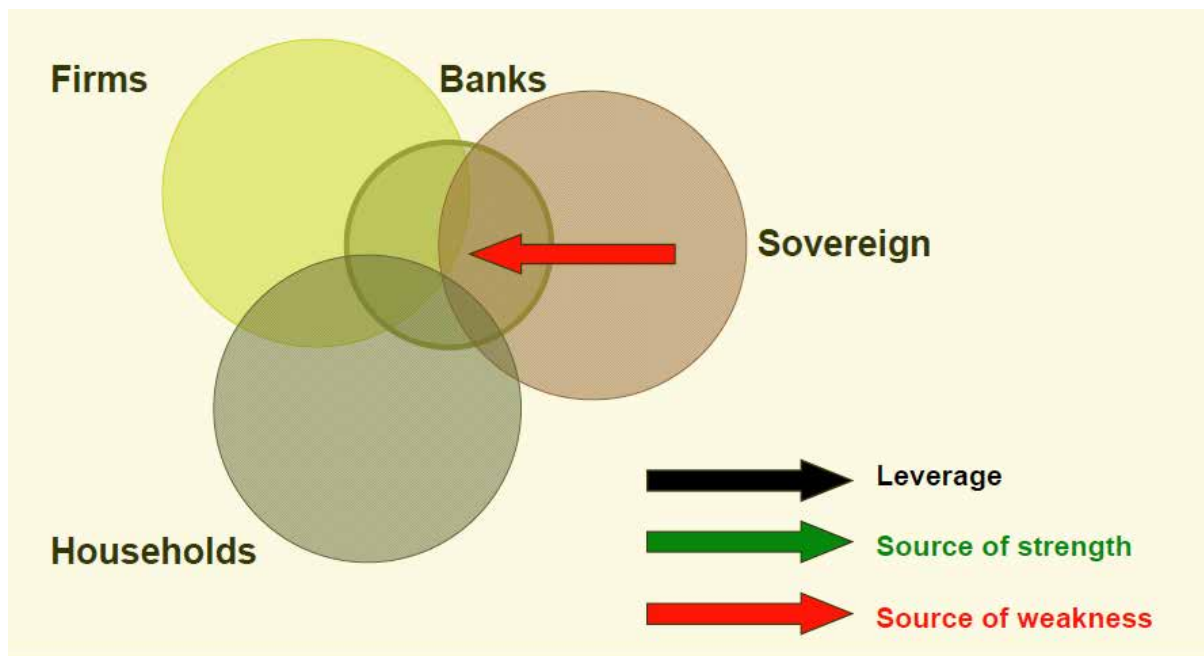
<sup>4</sup> “Banks and the budget: lessons from Europe”, speech to SUERF Conference, Dublin, 20 September 2010 ([www.bis.org/review/r100921b.pdf?frames=0](http://www.bis.org/review/r100921b.pdf?frames=0)).

<sup>5</sup> C Reinhart and K Rogoff, *This time it’s different: Eight centuries of financial folly*, Princeton University Press, 2009.

Third, the loss of the sovereign's creditworthiness can induce fiscal consolidation. Even if necessary and overdue, this may undermine credit demand and weigh on the quality of private sector debt in the short term.

Graph 7

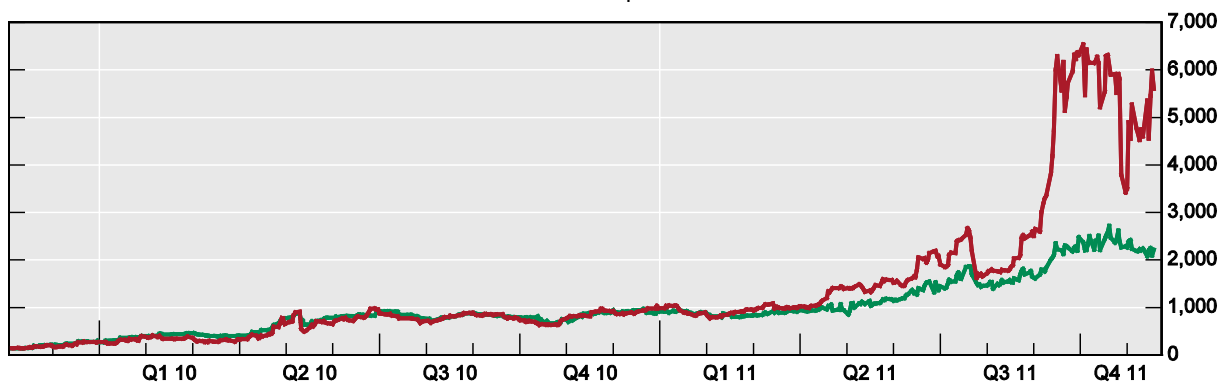
**Sovereign as source of weakness to banks**



Graph 8

**Greek CDS spreads<sup>1</sup>**

In basis points



<sup>1</sup> Five-year on-the-run CDS premia. <sup>2</sup> Simple average over a sample of domestic financial institutions.

Source: Markit.

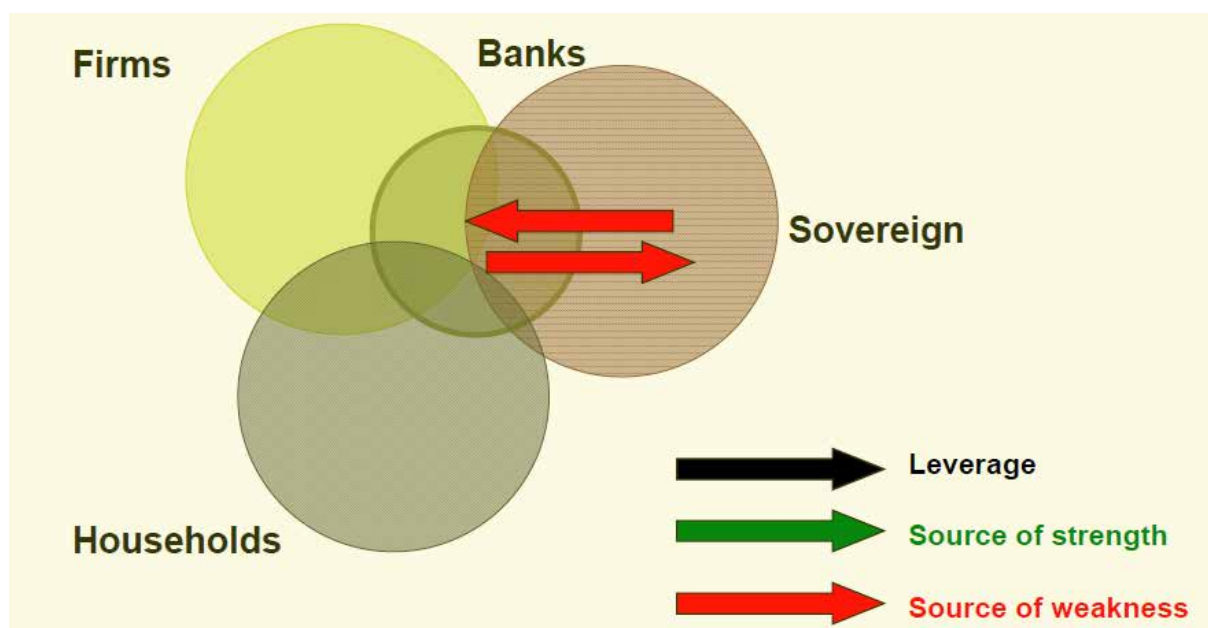
In most economies, banks have sizeable exposures to the home sovereign, showing a strong home bias. Not surprisingly, holdings of domestic government bonds as a percentage of bank capital tend to be larger in countries with high public debt. Thus, among the countries severely affected by the sovereign crisis, banks' holdings are relatively largest in Greece and smallest in Ireland. To some extent, accounting shields banks from the immediate impact of declines in the market prices of sovereign bonds. Indeed, across EU countries, most of the domestic sovereign exposure (85% on average) is held in the banking book. Then, in addition to the domestic exposure, there are exposures to other sovereigns. These can

weaken the home sovereign when its banks need support to deal with exposures to the foreign sovereigns.

Given these two-way influences, there is a clear and present danger of malign feedback from banks to sovereigns and from sovereigns to banks. In Europe today, just such a pernicious feedback loop joins the sovereign's credit risk with that of the banks. This is shown in the abstract in Graph 9 and in the data for Italy, Spain, Belgium and France in Graph 10. In Graph 11, this feedback becomes a source of weakness in the business and household sectors and jeopardises the normal flows of credit.

Graph 9

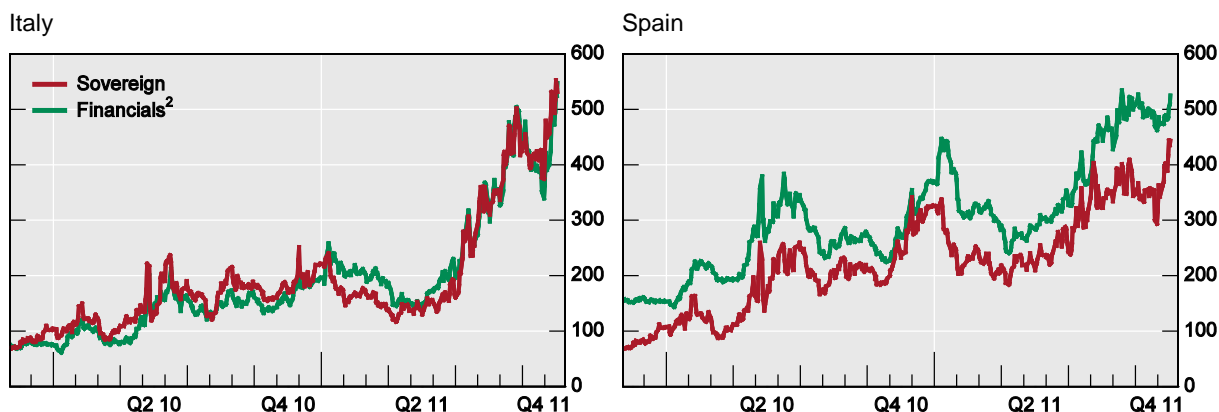
**Sovereign and banks as two-way sources of weakness**



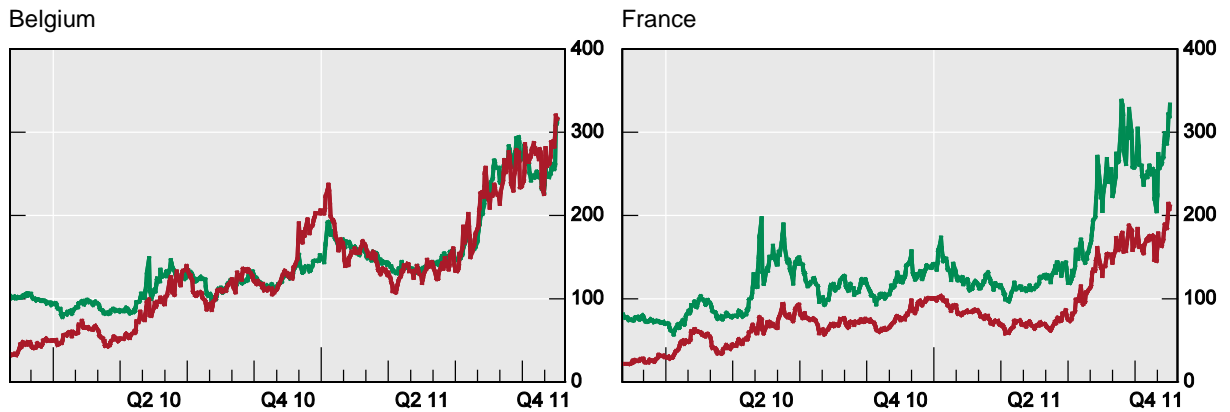
Graph 10

**CDS spreads<sup>1</sup>**

In basis points





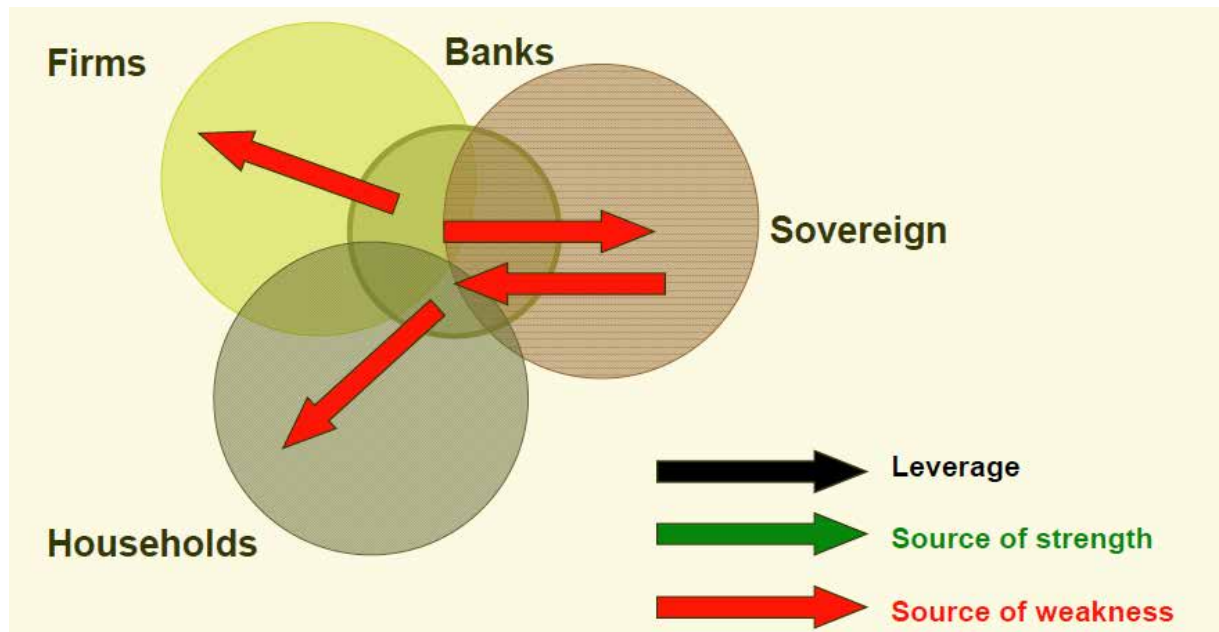


<sup>1</sup> Five-year on-the-run CDS premia. <sup>2</sup> Simple average over a sample of domestic financial institutions.

Source: Markit.

Graph 11

**Sovereign and banks as two-way sources of weakness leading to credit crunch**

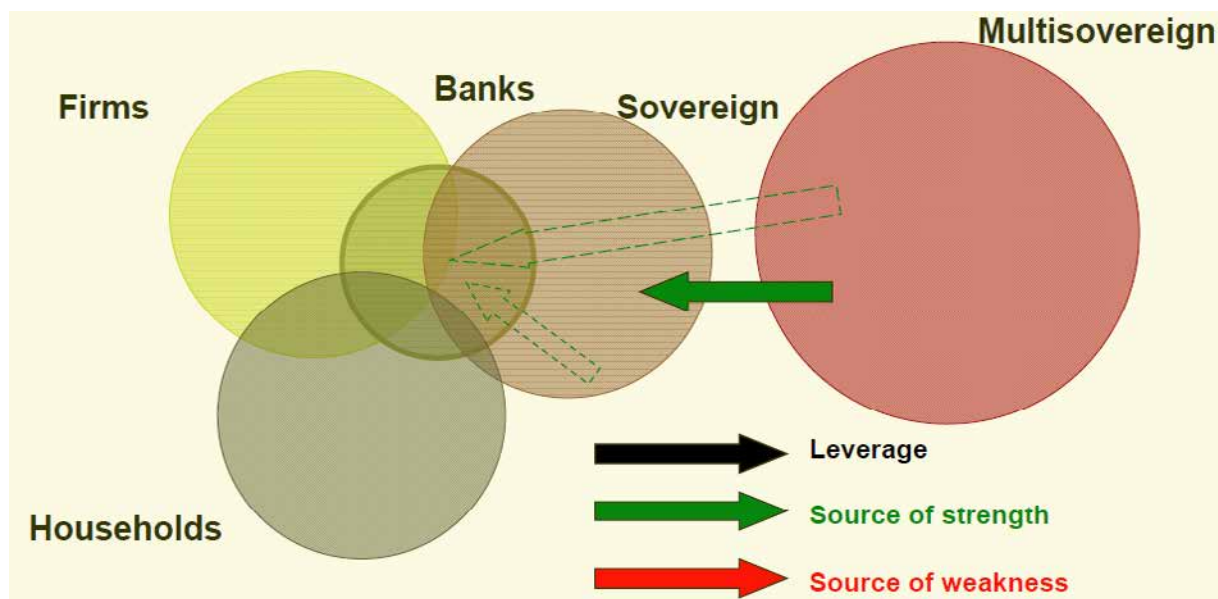


When sovereign debt morphs from a risk-free into a “credit risk” instrument, the consequences are likely to be severe. They are likely to include disruption to the financial system and abrupt deleveraging by banks, harming the real economy and employment. Sovereigns need to earn back their risk-free status by credible and tangible fiscal consolidation. Structural reforms are desirable to allow faster trend growth. In the meantime, credible multilateral financing backstops can concentrate the minds of market participants on fundamental improvements rather than market dynamics. This is shown in Graph 12. Speed is critical if contagion is not to spread.

When a sovereign crisis leads to rapid deleveraging, the financial spillovers to other economies can be significant. This is particularly true for countries where cross-border credit grew strongly ahead of the crisis. An important feature of cross-border credit flows is that they tend to exacerbate domestic credit cycles.

Graph 12

**Multi-sovereign backstop for sovereign and banks**



Given the dynamics of sovereign and bank interactions, there has been some discussion of the role of bank regulation. In that context, let me remind you of the treatment of sovereigns in Basel II and III.<sup>6</sup> Let me reiterate that, in an ideal world, sovereigns would have managed their debt in a macroprudential fashion. Then they would have presented so little credit risk that it would not much matter what bank risk managers thought of their default probability. It is this practically risk-free status, together with the confidence it engenders, that sovereigns must now win back.

However, this ideal world is not the one we now live in. Large, sophisticated banks that base their credit risk on their internal ratings are required by Basel II and Basel III to discriminate among risks. The Basel II internal ratings-based approach for calculating capital to be held against credit risk does not imply a zero risk weight, even for highly rated sovereigns. It calls instead for a granular approach that allows for a meaningful differentiation of sovereign risk. Banks need to assess the credit risk of individual sovereigns using a granular rating scale, one which accounts for relevant measured differences in risk with a specific risk weight per sovereign. Such an approach will bolster banks' capital and help them repair their balance sheets, thereby increasing their financial strength and bolstering confidence in their funding positions. In passing, let me note that the 3% leverage ratio in Basel III in effect sets a floor on sovereign holdings.

## Capital and growth

More and better capital will go a long way towards achieving a more resilient financial system. Some have expressed concerns that strengthening bank capital could slow growth

<sup>6</sup> H Hannoun, "Sovereign risk in bank regulation and supervision: where do we stand?", speech to the Financial Stability Institute High-Level Meeting, Abu Dhabi, United Arab Emirates, 26 October 2011 ([www.bis.org/speeches/sp111026.htm](http://www.bis.org/speeches/sp111026.htm)).

and delay recovery. From the outset, policymakers have devoted a great deal of careful analysis to this question. In the process, we have made some real advances in our understanding of how additional capital might affect growth. This was very much a cooperative enterprise in which many central banks participated with a variety of models.

Two studies conducted last year under BIS auspices found that the costs of better capitalised banks are likely to be modest, and far outweighed by the benefits. And this applies both in the transition phase and in the steady state.

On the one hand, the Macroeconomic Assessment Group formed by the FSB and the Basel Committee looked at whether banks might attempt to reduce lending during the transition to higher capital. They found that this would have a rather small impact on the economy, with reduction in annual growth rates limited to 3 to 5 basis points during the time that the extra capital is being built up. In addition, the impact on activity would be only temporary, as GDP would return to its trend path afterwards. So the impact would be quite minor. And indeed, this conclusion is supported by what we have so far observed: many banks have already increased their capital ratios, ahead of schedule, and this without any noticeable impact on lending spreads or tightening of lending terms.

On the other hand, the long-term economic impact (LEI) group was tasked to study the long-run costs and benefits of the requirements, ie after the transition period that the MAG analysed. The LEI group found that additional *permanent* GDP costs should be small. By contrast, the benefits from reducing crisis risks will be substantial. The costs will be low because investors will come to recognise that soundly capitalised banks are less risky, and will demand a lower return on equity. This limits any long-term widening in credit spreads. At the same time, there are huge potential gains from the reduced risk of financial crises and the attendant GDP losses. The LEI group found that, with capital ratios at or even above the proposed Basel III minimum of 7%, the benefits would greatly exceed the costs.

Moreover, the transition period will be long enough for banks to achieve the higher capital ratios without skimping on their lending and so derailing the recovery. In fact, the persistence of vulnerabilities argues in favour of building strength now – and even for going faster than the Basel III schedule where possible. The reason is simple: a sound recovery hinges on having a secure financial system. Businesses and households will not regain the confidence to plan, to invest and to innovate until they have regained their trust in the financial system and its durability.

With this reference to research that has informed policymaking in real time, let me close with an admission and a plea. I admit that we policymakers and central bankers face conceptual challenges in striking the right balance between growth, equity and stability. And I make a plea for research, knowledge-sharing and training that can prepare supervisors to meet these difficult challenges. This is a mission that I am very confident that CAFRAL will fulfil with distinction.