

Hazardous tango: sovereign-bank interdependence and financial stability in the euro area

SILVIA MERLER
Research assistant
Bruegel

JEAN PISANI-FERRY*
Professor of economics
Université Paris-Dauphine

The strong interdependence between banking and sovereign crisis has emerged as a salient feature of euro area crisis. This interdependence, for sure, is not a specific feature of the euro area. But as pointed out by several authors the vicious cycle seems to be extremely strong in the euro area. The reason why euro area banks and sovereigns seem to be indissolubly tied together is twofold. On one hand, in the absence of a supranational banking resolution framework, member states keep individual responsibility for the rescue of their national banking system. Given the size of the banking systems across the euro area, this implies that the fiscal consequences of rescuing banks are potentially very large and explains how stress in the banking system can spill over to sovereigns. On the other hand, domestic banks hold on their balance sheets a considerable share of the debt issued by their domestic government. Any doubt about sovereign solvency immediately therefore affects domestic banks. This two-way bank-sovereign interdependence constitutes one of the specific features of the euro area that renders it especially fragile. In spite of this demonstrated weakness there has been surprisingly little policy action to remedy this state of affairs. Proposals for giving the European Union or the euro area responsibility for rescuing banks, or at least backstopping national authorities, have been consistently rejected.

* Director of Bruegel.

The strong interdependence between banking and sovereign crisis has emerged as a salient feature of euro area crisis. This interdependence, for sure, is not a specific feature of the euro area. Research on financial crises has highlighted time and again that historically, banking crises tend to be followed by sovereign crises (Laeven and Valencia, 2008, Reinhart and Rogoff, 2009). But as pointed out by several authors (De Grauwe, 2011, Alter and Schueler, 2011, Acharya *et al.*, 2011) the vicious cycle seems to be extremely strong in the euro area.

The reason why euro area banks and sovereigns seem to be indissolubly tied together is twofold. On one hand, in the absence of a supranational banking resolution framework, member states keep individual responsibility for the rescue of their national banking system. Given the size of the banking systems across the euro area, this implies that the fiscal consequences of rescuing banks are potentially very large and explains how stress in the banking system can spill over to sovereigns. On the other hand, domestic banks hold on their balance sheets a considerable share of the debt issued by their domestic government. Any doubt about sovereign solvency immediately therefore affects domestic banks. This two-way bank-sovereign interdependence constitutes one of the specific features of the euro area that renders it especially fragile.

In spite of this demonstrated weakness there has been surprisingly little policy action to remedy this state of affairs. Proposals for giving the European Union or the euro area responsibility for rescuing banks, or at least backstopping national authorities, have been consistently rejected. If anything, the large-scale three-year provision of liquidity to banks by the European central bank (ECB) at the end of 2011 may have served as an incentive to increase even further the banks' exposure to their sovereign. Data do not allow yet to document this effect, known as the "Sarkozy carry trade", but evidence suggests that already by the Autumn of 2011 this exposure had increased in the most vulnerable countries. So the euro area's fragility is still there, it has possibly even been made worse.

In this paper we first document the extent of bank-sovereign interdependence in the euro area.

Second, we explain why it is more pronounced than elsewhere. Third, we examine how the situation has evolved since the emergence of tensions in the sovereign bond markets. Fourth, we discuss policy responses.¹

1 | THE EVIDENCE

The evolution of sovereign and bank credit default swaps (CDSs) illustrates graphically the correlation between sovereign and bank solvency. As indicated in Chart 1, the cases of Spain and Italy are especially

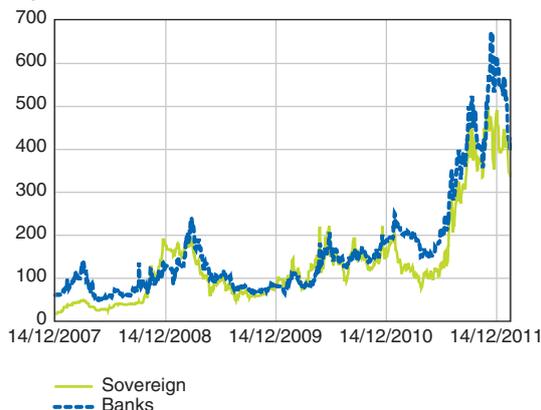
Chart 1
Sovereign and bank CDSs, Spain and Italy
2008-2011

(5 years CDS premia on sovereign and banks, daily data)

a) Spain



b) Italy



Note: The index for banks' CDS is constructed as a weighted average of individual banks' CDS, according to risk-weighted assets reported in the EBA stress test.

Sources: Datastream, European Banking Authority.

¹ This paper partially draws on evidence presented in Pisani-Ferry (2012) and Merler and Pisani-Ferry (2012).

telling: the two series have consistently moved in tandem since 2008 for Italy and since 2010 for Spain. Whenever perceived solvency risks for either the state or the banking system have increased, there has been a noticeable effect on the other one. Similar evidence can be found for other countries in the euro area.

This high degree of correlation cannot be found in the United States (Chart 2). In 2009 there was a brief period of concern over the situation of banks but it did not affect materially the perceived solvency

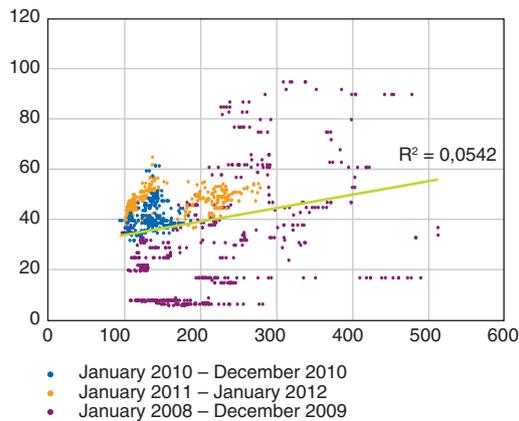
of the federal government: the safe-haven role of the Treasuries remained unaffected by changing conditions in the banking system. Nor did it last. In the euro area, by contrast, the relationship is clearer and has the slope of the regression line has increased between the December 07-December 11 period.

Chart 3 documents this correlation in more detail, going to country level. Again, a pattern of strong and increasing interdependence between bank and sovereign CDSs is found for both Spain and Italy, as well as for other countries not reported here.

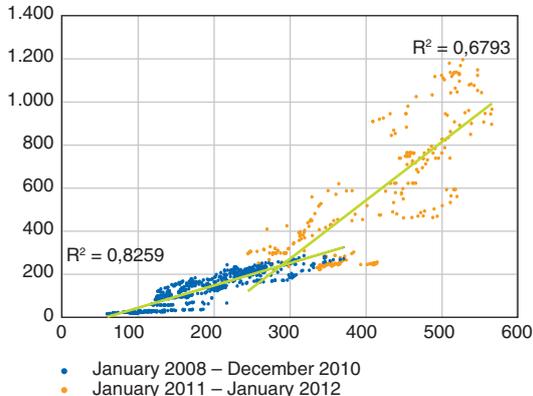
Chart 2
Correlation of sovereign and banks CDS
in the United States and the euro area
 January 2008 to January 2012

(x axis = banks CDS index 5 years; y axis = sovereign CDS 5 years)

a) United States



b) Euro area

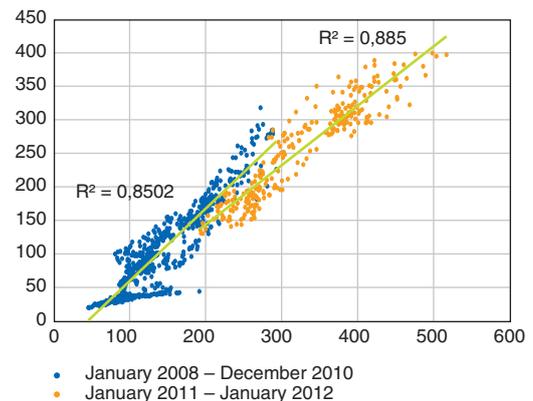


Sources: Datastream (5 years sovereign CDS for the United States) and Thomson Reuters (5 years sovereign CDS Index for the euro area and 5 years CDS Indexes for North America and euro area banks).

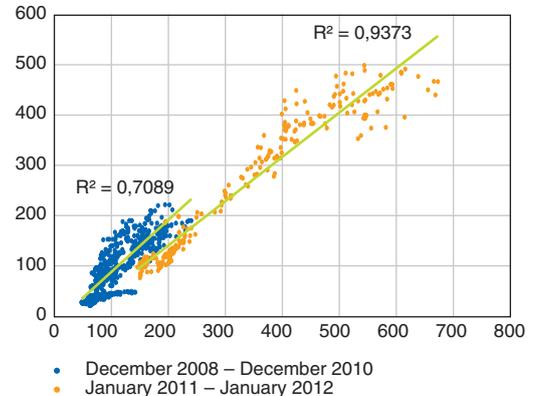
Chart 3
Correlation of sovereign and banks CDSs,
Spain and Italy
 January 2008 to January 2012

(x axis = average 5 years banks' CDS; y axis = 5 years sovereign CDS)

a) Spain



b) Italy

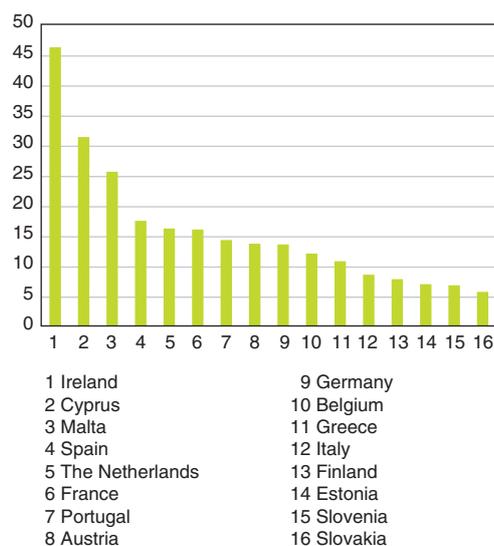


Sources: Datastream, EBA.

2 | CHANNELS OF INTERDEPENDENCE: BANKS TO SOVEREIGNS

The most immediate way in which pressure on the banking system can spill over to sovereigns is through the perceived cost of bank rescue. In a context of generalised stress and uncertainty, the anticipation by markets of such cost is immediately translated into doubts on the future sustainability of the sovereign's public finance position and on its creditworthiness. Member states of the European Monetary Union (EMU) are vulnerable to the cost of banking crises because despite the strong degree of monetary integration reached in the euro area, states remain individually responsible for rescuing banks in their jurisdiction. The European Financial Stability Facility (EFSF), can help them with loans earmarked for that purpose but it is not entitled to inject capital directly into the banking system. The cost of recapitalising banks remains with the individual states and it can be very high, especially for countries that are home to large banks with significant cross-border activities. Indeed the degree of leverage reached by euro area banking systems before the crisis is striking: still in 2010, total bank assets amounted to *45 times* government tax receipts in Ireland, and the ratio was very high also in several other countries (Chart 4).

Chart 4
Ratio of bank assets to government tax receipts
2010



Source: Pisani-Ferry (2012).

The consequences of this situation became apparent when Ireland had to rescue its banking system after the latter underwent heavy losses in the credit boom of the 2000s. Ireland at the end of 2007 was a fiscally virtuous and apparently super safe country, with a debt-to-GDP as low as 25 percent. At the end of 2011 – after the public support was extended to the financial system – its debt ratio was evaluated at 108 percent and the country had had no alternative than to file for an IMF-EU (International Monetary Fund – European Union) conditional assistance programme. Not all the increase in the debt ratio was directly attributable to the banking crisis but according to IMF (2011) it nearly amounted to 40 per cent of GDP, in other words about half of the increase in the debt ratio. The other half corresponded to indirect economic costs, especially the collapse in tax revenues.

A recent IMF paper (Mody and Sandri, 2011) identifies the rescue of (globally or locally) important banks in 2008/2009 as the trigger of a regime shift in the dynamics of euro area countries' sovereign spreads. Until mid-July 2007, sovereign spreads are found to have behaved essentially random. During the first phase of the subprime crisis (until the rescue of Bear Stearns in March 2008) a pattern emerged, but spreads remained mostly related to global factors like flight to quality and heightened global risk aversion. Starting with the rescue of Bear Stearns, however, *domestic* factors like the prospects of the financial sector started becoming important for the differentiation of spreads in the euro area and this trend was further reinforced by the nationalisation of Anglo-Irish – a relatively small bank but that was perceived as systemically important for Ireland. These events led financial market to familiarise with the idea that important banks would be bailed out by government if needed, while at the same time clearly showing how relevant the fiscal implications of such rescues could be. Ireland is however only an extreme case: in fact, all western European sovereigns in the euro area (but much less so the new member states, where banks are largely foreign-owned) are heavily exposed to the risk of having to rescue domestic banks. In a detailed assessment of the two-way sovereign-banking feedback loop, Acharya *et al.* (2011) present evidence that the announcements of bailouts in Western Europe coincided with a generalised “shift” of credit risk from banks onto sovereign, evident in the contemporaneous decrease in banks CDS and increase in sovereign CDS. Moreover, they also find both banks and sovereign CDS to increase in the post-bailout period,

moving together. Similarly, Alter and Schueler (2011) find that before government intervention the credit risk spills over to sovereigns, whereas after the intervention (when government contingent liabilities are realised) the contagion tends to go from sovereigns to banks.

3| CHANNELS OF INTERDEPENDENCE: SOVEREIGNS TO BANKS

Unlike banks-to-sovereign, sovereign-to-banks contamination does not directly arise from regulatory requirements but from the mere fact that banks in the euro area still hold high and often disproportionate amounts of bonds issued by their own sovereigns (something that persists in spite of single market regulation that prohibit discriminating according to the nationality of the issuer). This implies that stress on the sovereign bonds market can very easily spill over to the national banking system.

As a matter of fact, prior to the crisis domestic banks in several countries of the euro area were holding large proportions of total government debt. This proportion was close to 30 per cent in Germany, about 20 per cent in Spain, around ten per cent in France, Greece,

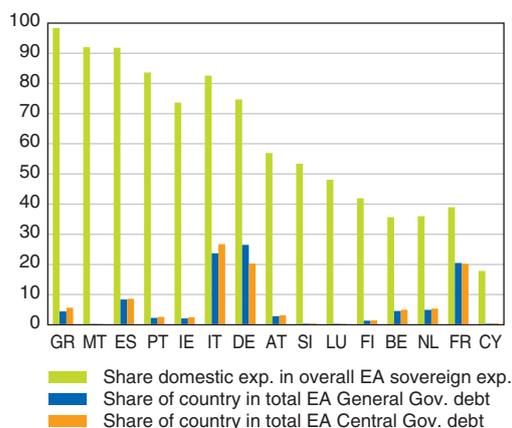
Italy, the Netherlands and Portugal. By contrast it was negligible in the United States, the United Kingdom and Ireland (Merler and Pisani-Ferry, 2012).

Government bonds were appealing to banks because they can be easily used as collateral (both on the interbank markets in normal times and for central banks emergency lending in troubled times) and because the Basel regulatory framework allowed for the zero-risk weighting of bonds issued by euro area governments. Furthermore, banks in the euro area exhibited a strong home bias in the composition of their sovereign bond portfolios (Chart 5). This bias diminished after the introduction of the euro eliminated currency risk and regulations that treated foreign euro-denominated bonds differently from national bonds were scrapped. As pointed out by Lane (2006) and Waysand, Ross, de Guzman (2010), EMU in fact triggered a significant increase in cross-border bond investment within the euro area, over and above the overall diversification of portfolios resulting from financial globalisation. Nevertheless, the home bias has persisted to a surprising degree. The right panel of Chart 5 shows that the domestic bias in the sovereign portfolios persisted between the first and the second wave of tests performed by the European Banking Authority (EBA) in 2011, especially in troubled countries.

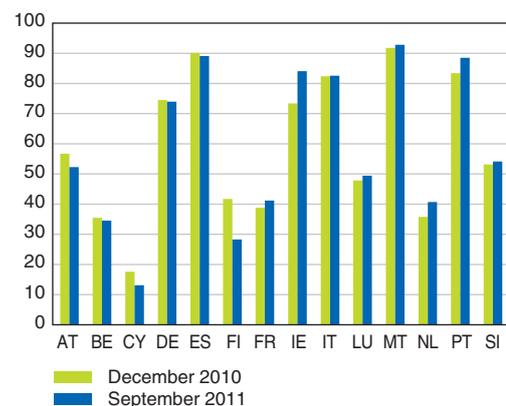
Chart 5
Indicator of home bias in the banks' holdings of government debt
 2010

(%)

a) Home bias (gross exposure)



b) Domestic exposure as % of total EA exposure (selected banks)



AT = Austria; BE = Belgium; CY = Cyprus; DE = Germany; ES = Spain; FI = Finland; FR = France; GR = Greece; IE = Ireland; IT = Italy; LU = Luxembourg; MT = Malta; NL = Netherlands; PT = Portugal; SI = Slovenia; EA = euro area.

Note: The two figures are not entirely comparable: in the occasion of the December capital exercise, EBA disclosed data only on a subset of the 91 banks covered in the stress test of July (in particular, data for many Spanish banks and all Greek banks are not available). So the percentages in the left panel are computed considering all the 91 banks, whereas percentages in the right panel were computed over the same (narrower) sample available in December.

Sources: Pisani-Ferry (2012); EBA.

The impact of the deterioration in the sovereign creditworthiness depends also on the way banks accounted for government bonds in the balance sheet. Variations in the price of securities held at market value (in the trading book, available-for-sale and fair value option books) impact directly the profit and loss statement or the equity of banks, whereas securities held in the banking book at amortised costs only become relevant when they are impaired (Bank for International Settlements, 2011). Table 1 below shows that the percentage of exposure recorded at market value was substantial, but the part in the trading book was small, thus limiting the immediate effect on operating impact of changes in the value of securities.

Large holdings of government securities imply that when government securities start being considered risky assets, banks holding them will likely face difficulties to access liquidity. This has been the case in the euro area since early summer and it is mirrored in the latest ECB bank lending survey (January 2012), according to which about 30% of euro area banks attributed the deterioration in financing conditions to the sovereign debt crisis, mostly via the collateral channel. The ECB has intervened with extraordinary liquidity measures and the broadening of the collateral pool in the attempt to ease these constraints, but effect is not evident yet.

This two-way interdependence creates the preconditions for a negative feedback loop.

Government guarantees to banks, either implicit or explicit, increase the stress on sovereigns and in turn lower the value of such guarantees for banks, thereby adding to the banks' stress. Implicit guarantees (i.e. perception that a "too-big-to-fail" banks would be supported by the government even in the absence of an explicit commitment ex ante) are likely to enter the sovereign-to-banks channel, as they are more difficult to be granted if the sovereign itself is under pressure. On the other hand, explicit guarantees (e.g. government guarantees on bank bonds) are likely to enter the banks-to-sovereign channel, as they are more likely to become actual liabilities for the government if the banking system is in trouble.³

Macroeconomic channels are also relevant. Reinhart and Rogoff (2009) have pointed that only part of the huge debt increase observed in the aftermath of financial crises is directly related to the bank rescue, while a considerable part of it reflects the collapse in tax revenues in the wake of the slowdown in economic activity associated with banking crises.⁴ Analysing systemic banking crises over the period 1970-2007, Laeven and Valencia (2008) document that on top of the fiscal cost banking crises had a significant real effect.⁵ The banking system obviously plays a crucial role here: when the banking system is illiquid/or pushed to deleverage, credit to the other sectors tend to be cut, threatening growth prospects and public revenues and casting further doubts on public finances. Some evidence that this

Table 1
Indicators of sovereign exposure of euro area banks

(%)

Country	Total banks sovereign exposure as % of total banks RWA	Total banks sovereign exposure as % of total banks CT1	% of net exposure in AFS banking book	% of net exposure in FVO banking book	% of net exposure in the trading book
Austria	21.6	262.9	14.0	1.9	11.6
Belgium	42.6	374.7	52.7	8.0	5.3
Germany	41.5	444.1	26.8	8.7	20.1
Spain	17.7	240.4	46.2	0.0	12.5
France	21.6	256.1	59.0	0.0	22.4
Greece	26.1	254.6	20.2	0.1	3.1
Ireland	8.5	136.9	38.7	0.0	0.8
Italy	19.8	268.0	37.0	6.7	23.5
The Netherlands	22.8	214.8	66.6	0.5	10.9
Portugal	13.1	183.0	49.5	0.5	21.5
Slovenia	15.5	271.4	65.8	0.0	0.0

AFS: available-for-sale; FVO: fair-value-option.

Source: EBA Stress Test July 2011 (data as of December 2010).

- 3 The size of government guarantee can be substantial. Panetta et al. (2009) document that just over the period October 2008-May 2009 banks in nine euro area countries issued about EUR 300 billion of government guaranteed bonds.
- 4 Looking at the cycle of real GDP per capita around the crises, Reinhart and Rogoff (2009) find that historically the decline has been of 9.3% on average.
- 5 They find output losses of systemic banking crises (in terms of deviation from trend GDP) to be around 20% of GDP on average over the first four years of the crises. Furceri and Mourougane (2009) also present evidence for the OECD countries suggesting that financial crisis lower potential output by 1.5% to 2.4% on average.

may be a substantial risk for the euro area comes from the ECB Bank Lending Survey (January 2012), according to which euro area banks tightened credit standards for loans to non-financial corporations and households considerably in the fourth quarter of 2011⁶ and expect a further tightening for the first quarter of 2012. On top of the generalised difficulties to access market financing, one third of respondents cited adjustment to new regulation and capital requirements as one of the factors contributing to the tightening of credit standards on loans to large enterprises⁷ and they expect a further tightening due to regulatory pressure in the first half of 2012.

4 | FROM BAD TO WORSE?

The euro area was caught unprepared by the sovereign crisis. Ad-hoc responses were initially devised without much consideration for their longer-term implications. Two years on, however, time has come

to determine whether the euro system has grown stronger or weaker in consequence.

To this end we report in Table 2 the evolution between 2007 and 2011 of the share of different holding sectors in the total holdings of government securities issued by the main euro area countries as well as the United States and the United Kingdom. It suggests that the vulnerability of the euro area as far as it concerns the banks-sovereign interdependence was to some extent related to inherited patterns of debt holdings, but also that these traits have in fact accentuated since 2007.

Comparing 2011 to 2007, some important changes are evident. First of all, holdings of government debt by non-residents have diminished in proportion for all the countries in trouble (Greece, Ireland, Portugal, Spain and to a lesser extent Italy), have remained more or less stable for France and the Netherlands and have increased for Germany. It is worth reminding that these data only cover end-Q2 or Q3

Table 2
Breakdown by sector of holdings of government securities
2007 and 2011

(billions of national currency and, in parentheses, percent of total stock)

Country	Domestic banks		Central bank		ECB		Other public		Other residents		Non-residents		Total	
	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011	2007	2011
Greece	23.9 [10.6]	35.5 [19.4]	3.2 [1.4]	4.8 [2.62]	...	42.0 [22.9]	25.4 [11.3]	18.5 [10.1]	6.5 [2.9]	11.9 [6.5]	166.1 [73.8]	70.5 [38.5]	225.1	183.2
Ireland	0.8 [2.6]	15.1 [16.9]	n/a	n/a	...	14.4	0.1 [0.3]	0.8 [0.9]	1.2 [3.9]	2.2 [2.4]	28.8 [93.1]	57.1	30.9	89.7
Portugal	10.6 [9.1]	36.0 [22.4]	0.0 [0.0]	1.2 [0.8]	...	18.0 [11.2]	...	...	17.3 [15.0]	21.7 [13.5]	87.7 [75.9]	83.5 [52.1]	115.6	160.5
Italy	159.9 [12.1]	267.9 [16.7]	60.3 [4.6]	76.5 [4.8]	...	103.4 [6.4]	...	...	450.7 [34.2]	471.6 [29.3]	647.1 [49.1]	687.5 [42.8]	1,317.9	1,606.9
Spain	74.3 [21.2]	173.1 [27.0]	9.2 [2.6]	20.8 [3.2]	...	34.5 [5.4]	26.5 [7.6]	65.3 [10.2]	73.3 [20.9]	128.4 [20]	166.7 [47.7]	219.3 [34.2]	349.9	641.4
Germany	456.9 [29.7]	404.2 [22.9]	4.4 [0.3]	4.4 [0.3]	...	...	0.5 [0.03]	0.5 [0.03]	317.1 [20.6]	249.2 [14.1]	761.5 [49.4]	1,105.0 [62.7]	1,540.4	1,763.3
France	83.3 [13.0]	123.3 [14.0]	n/a	n/a	...	...	...	...	205.0 [32.0]	255.5 [29.0]	352.4 [55.0]	502.2 [57.0]	640.7	881.0
The Netherlands	18.7 [8.9]	33.3 [10.7]	n/a	n/a	...	...	0.9 [0.4]	3.4 [1.1]	44.7 [21.4]	66.4 [21.4]	144.6 [69.2]	207.1 [66.8]	209.0	310.1
United Kingdom	-7.9 [-1.6]	114.9 [10.7]	2.4 [0.5]	207.9 [19.4]	...	...	0.8 [0.2]	1.5 [0.1]	337.3 [68.5]	423.5 [39.5]	160.2 [32.5]	323.5 [30.2]	492.8	1,071.2
United States	129.8 [1.4]	284.5 [2.0]	754.6 [8.2]	1 617.1 [11.3]	...	...	4,616.5 [50.0]	5,087.7 [35.5]	1,375.1 [14.9]	2,853.0 [19.9]	2,353.2 [25.5]	4,500.8 [31.4]	9,229.2	14,343.1

Source: Merler and Pisani-Ferry (2012).

6 The net percentage of banks contributing to tightening standards rose to 35% from 16% in previous quarter. This was higher than anticipated by survey participants at the time of the previous survey (22% expected).

7 21% said it contributed to the tightening for SMEs.

at the latest, so the situation may well have changed since (especially for Italy, which has been undergoing considerable stress from September onwards). This drop in the proportion of non-resident holdings is evidence of portfolio rebalancing away from risk and the increase for Germany illustrates the safe-haven role of the Bund (as well as the US T-Bond).

Second and conversely, the share of domestic banks in total holdings of domestic sovereign debt has increased significantly between 2007 and 2011 in all countries whose bonds have been shunned by non-residents (Greece, Ireland, Portugal, Spain and Italy), it has remained roughly stable in France and the Netherlands, and it has decreased in Germany. In terms of GDP, holdings of domestic debt by Italian banks amounted to more than one-third of GDP in

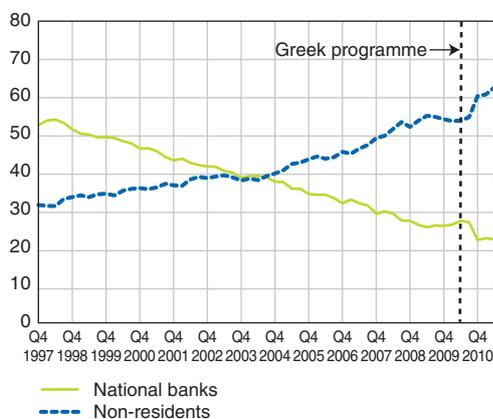
Italy, one-fifth in Portugal, Spain and Greece, and one-sixth in Germany in mid- to late-2011.

To find out when these changes took place and what may have triggered them, we report in Chart 6 the evolution from the late 1990s until now of the shares of domestic banks and non-residents in total holdings of government debt for Germany, Greece, Spain, and Ireland. Consistent with the effects of the euro documented in the literature, the graphs first provide evidence of portfolio diversification prior to 2009. After 2009, however, they indicate that a reversal has taken place in all countries in trouble. In most countries the evolution of the share of non-residents almost mirrors that of domestic banks, suggesting that the latter substituted the former when they started to shun government bonds.

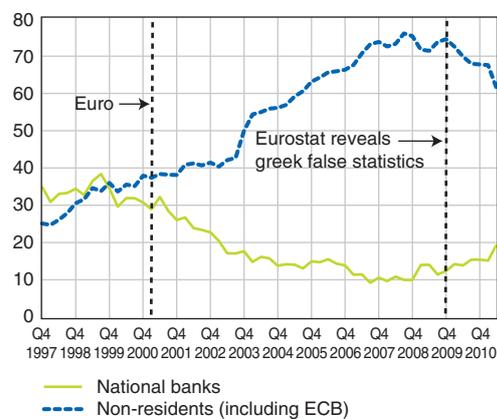
Chart 6
Shares of domestic banks and non-residents in total holdings of government debt for Germany, Greece, Ireland and Spain

(%)

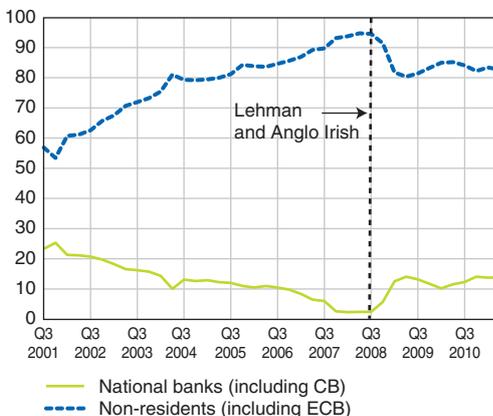
a) Germany



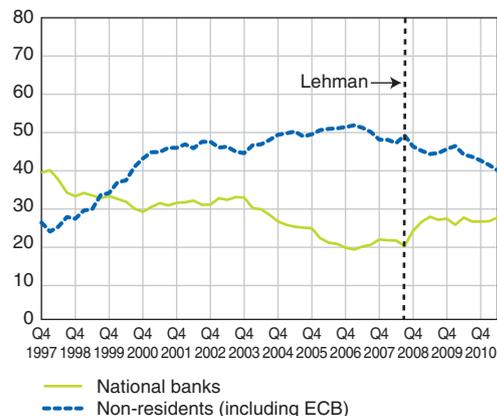
b) Greece



c) Ireland



d) Spain



Source: Merler and Pisani-Ferry (2012).

5| POLICY IMPLICATIONS

In the previous sections we have shown that the exposure of governments to ‘their’ banks and of banks to ‘their’ governments put public finances in the euro area at the mercy of self-fulfilling liquidity crises and exposes them to solvency crises. As seen in Section 1, since 2008-2009 markets have been pricing the risk that governments go further into debt as a consequence of bank weaknesses, or that banks incur heavy losses as a consequence of their sovereign holdings into CDS spreads.

In Section 4 we have shown that developments since 2007 have indeed increased the structural vulnerability of euro area countries, reinforcing the sovereign-banking crisis vicious cycle. All countries where concerns about state solvency arose in recent years have seen a reversal in the previously steady increase of the share of non-residents in total holdings of government debt and domestic banks have become *even more* creditors of ‘their’ sovereigns, at a time when sovereigns are exposed to increasing pressures.

In the short term, these observations lead to question the effectiveness of ECB provision of liquidity to banks as a means to alleviate the sovereign crisis. In a moment in which government bonds are considered risky assets, banks whose exposure to their domestic sovereign has increased markedly are faced with both a balance sheet and a reputational risk in comparison to non-euro area counterparts, and may prove reluctant to increase this exposure even further. Assuming it is nevertheless effective, one may wonder whether it is appropriate, as alleviation of tensions in government bond markets may be obtained at the cost of making banks even more exposed to domestic sovereign risk.

In the longer term, the question is whether and how regulators and supervisors in the euro area create incentives for banks to reduce exposure to their own sovereign. Until recently regulation did not consider the issue. On top of the zero-risk-weighting of government bonds, there were no limits to exposure to a particular sovereign and as a consequence, banks and insurers were not given incentives to diversify. Consistent with the recognition that sovereign bonds are not risk-free, a case can therefore be made for reforming prudential regulation in order to limit bank (and insurance) exposure to a single borrower. Such

a reform would however amount to a fundamental transformation of the (mostly bank-based) financial systems of euro-area countries. Altering the “safe asset” status of government bonds would entail a chain of transformations of major significance – affecting for example the entire structure of pension funds assets – and this process is unlikely to be quick.

An alternative to letting banks reduce their exposure to specific sovereigns would be to supply them with a euro area reference safe asset. This is one the rationale for creating Eurobonds, either in the form of the Blue Bonds of Delpa and von Weizsäcker (2010), or in the form of one of their possible variants (the redemption bonds of the German Council of Economic Experts, 2011, the Eurobills of Hellwig and Philippon, 2011, or the synthetic ESBIEs of Brunnermeier *et al.*, 2010). The difficulties raised by these proposals are well known, but it is straightforward that they would offer a solution to the transmission of the solvency risk from sovereigns to banks.

Turning to the bank-sovereign channel, a possibility for banking reform would be to move both the supervision of large banks and the responsibility for rescuing them to European level, as advocated for several years by many independent observers and scholars (see for example Véron, 2007, 2011). Such a mutualisation would end the mismatch between tax revenues and the States’ potential responsibilities, would help reduce states’ vulnerability in the face of banking crises, and would therefore alleviate concerns about sovereign solvency. The feasibility of the latter reform depends however on the willingness of Member States to accept the pooling of budgetary resources, even to a limited extent. Until now they have consistently refused to contemplate such an option, both at the time of the global crisis in 2008 and after the European crisis erupted in 2010. The more ambitious versions of the proposal envision creating a permanent European Deposit Insurance Corporation financed by banks but benefitting from a backstop provided by the creation of a limited taxing capacity at EU level (Marzinotto, Sapir and Wolff, 2011).

Policy discussions on these issues, however, have not yet gained momentum, perhaps because each of the proposed solution requires going beyond the current script and contemplating the pooling of commitments and/or resources.

BIBLIOGRAPHY

Acharya (V.V.), Drechsler (I.) and Schnal (P.) (2011)
“A pyrrhic victory? Bank bailouts and sovereign credit risk”, *NBER Working Paper*.

Alter (A.) and Schueler (Y.S.) (2011)
“Credit spread interdependencies of European states and banks during the financial crisis”, University of Konstanz Dep. Of Economics *Working Paper* 2011/34.

Bank for International Settlements (2011)
“The impact of sovereign credit risk on bank funding conditions”, CGFS Papers No. 43.

Brunnermeier et al. (2010)
“European Safe Bonds (ESBies)”, Euronomics.

De Grauwe (P.) (2011)
“The governance of a fragile eurozone”, *Discussion Paper* 2011.

Delpla (J.) and von Weizsäcker (J.) (2010)
“The blue bond proposal”, Bruegel Policy Brief 2010/3.

European Central Bank (2012)
“Euro area bank lending survey”, 1st February 2012.

Furceri (D.) and Mourougane (A.) (2009)
“The effect of financial crises on potential output: new empirical evidence from the OECD countries”, OECD Economic Department *Working Paper* No. 699.

German Council of Economic Experts (2011)
“A European redemption pact”, (available at <http://www.sachverstaendigenrat-wirtschaft.de/233.html?&L=1>).

Hellwig (C.) and Philippon (T.) (2011)
“Eurobills, not eurobonds”, VoxEU 2nd December 2011.

International Monetary Fund (2011)
Fiscal Monitor, September.

Laeven (L.) and Valencia (F.) (2008)
“Systemic banking crises: a new database”, IMF *Working Paper*/08/224.

Lane (Ph.) (2006)
“The real effect of EMU”, *Journal of Economic perspectives*, 20:4, pp. 47-66.

Marzinotto (B.), Sapir (A) and Wolff (G) (2011)
“What kind of fiscal union?”, Policy Brief, 2011/6, Bruegel.

Merler (S.) and Pisani-Ferry (J.) (2012)
“Who is afraid of sovereign bonds?”, Bruegel Policy Contribution No. 2012/02.

Mody (A.) (2009)
“From Bear Stearns to Anglo Irish: how eurozone sovereign spreads related to financial sector vulnerability”, IMF *Working Paper*/09/108.

Mody (A.) and Sandri (D.) (2011)
“The eurozone crisis: how banks and sovereigns came to be joined at the hip”, IMF *Working Paper* /11/269.

Panetta (F.) et al. (2009)
“An assessment of financial sector rescue programs”, *BIS Papers* No. 48.

Pisani-Ferry (J.) (2012)
“The euro crisis and the new impossible trinity”, Policy contribution, 2012/1, Bruegel.

Reinhart (C.) and Rogoff (K.) (2009)
“The aftermath of financial crises”, AER, AEA Vol. 99(2), pp. 466-72.

Reinhart (C.) and Rogoff (K.) (2011)
“From financial crash to debt crises”, AER, AEA Vol. 101(5), pp. 1676-1706.

Véron (N.) (2007)
“Is Europe ready for a major banking crisis?”, Policy Brief, 2007/03, Bruegel.

Véron (N.) (2011)
“Testimony on the European debt and financial crisis”, Policy Contribution, 2011/11, Bruegel.

Waysand (C.), Ross (K.) and de Guzman (J.) (2010)
“European financial linkages: a new look at imbalances”, IMF *Working Paper*/10/295.

Wolff (G.) (2011)
“Is recent bank stress test really driven by the sovereign debt crisis?”, Bruegel policy contribution No. 2011/12.