

Box 1.2: Implications of higher yields for the banking sector and private sector funding in the euro area

The European economy has enjoyed very low funding costs over the last several years, with both the public and the private sector benefiting from a very accommodative monetary policy environment and low levels of risk aversion. However, this situation cannot continue forever as funding costs are bound to rise as monetary policy tightens or pockets of risk aversion emerge. The consequences on the real economy would vary considerably according to the nature of the rise in sovereign yields.

In the absence of risk aversion and still sustained nominal economic growth in the euro area, the gradual normalisation of monetary policy signalled by the ECB's intention to end asset purchases this year and possibly start raising rates next year should have a rather modest impact on real interest rates and the real economy. A rise in risk aversion in particular countries, however, could also cause sovereign yields to rise. If this were to happen without any improvement in macroeconomic conditions and/or higher inflation, then the ensuing rise in real interest rates would be more likely to have a significant adverse impact on the economy. Indeed, higher sovereign yields could raise funding costs for the entire economy if they spread to the private sector via banks or directly via bond markets.

During the 2011/2012 euro area sovereign debt crisis three interrelated contagion channels were observed. The first operated between sovereigns and their respective national banking systems (the co-called 'sovereign bank doom loop'), which led eventually banks to charge higher interest rates and reduce lending to the private sector. The second concerned the bond markets, with higher sovereign yields leading to higher yields for corporate debt. The third ran cross-country and led to higher funding costs for sovereigns and private sector borrowers in other vulnerable euro area Member States.

Following the sovereign market jitters this year triggered mainly by Italy's budgetary plans, this box examines the state of these contagion channels today and assesses the extent to which the current episode differs from the one in 2011/2012.

The sovereign-bank nexus

The sovereign-bank nexus that prevailed during the euro area crisis has been widely documented in the

academic literature.⁽¹⁾ The Bank of International Settlements⁽²⁾ in 2011 identified four channels through which a higher sovereign risk has a negative impact on financial institutions: (i) losses on holdings of government debt which are mostly national; (ii) lower value of the collateral banks can use to raise wholesale funding and central bank liquidity; (iii) lower ratings for banks following sovereign downgrades; (iv) reduced funding benefits that banks derive from implicit and explicit government guarantees. At the same time, the implicit guarantee offered by governments to national banks produced the reverse causality from banks to sovereigns.⁽³⁾ There is empirical evidence of both causalities playing a role with variations in time and across countries. Bank bailout events can be a turning point in this causal relationship. Quite intuitively, implicit government guarantees mean that higher credit spreads for banks in trouble lead to higher spreads for sovereign before bailouts while after bailouts, the opposite causality prevails.⁽⁴⁾ Overall, credit default swaps (CDS) data for banks and sovereigns over longer periods tend to show that bank risks generally led sovereign risks prior to the crisis while the causality reversed after 2010, when sovereign risks became the main source of bank risk.⁽⁵⁾

The interdependence between banks and sovereigns has gone through several phases. Before the 2007 crisis, there was no significant correlation between banks and sovereigns. After the 2008/2009 global financial crisis, correlations started to emerge and become positive⁽⁶⁾ overall. After 2010, during the sovereign debt crisis, banks and sovereigns became

(1) For a broad overview see Fratzscher, M. and M. Rieth (2015). 'Monetary policy, bank bailouts and the sovereign-bank risk nexus in the euro area'. *European Commission discussion paper* 009.

(2) See BIS (2011). 'The impact of sovereign credit risk on bank funding conditions'. *CGFS Papers* No 43.

(3) See Ejlsing, J. and W. Lemke (2010). 'The Janus-headed salvation: Sovereign and bank credit risk premia during 2008–2009'. *Economics Letters* 110:1, pp.28–31.

(4) See Alter A. and Y. S. Schüler (2012). 'Credit spread interdependencies of European states and banks during the financial crisis'. *Journal of Banking and Finance*, 36:12, pp. 3444–68.

(5) See S. Yu (2017), 'Sovereign and bank interdependencies - evidence from the CDS market'. *Research in International Business and Finance* 39, pp 68–84.

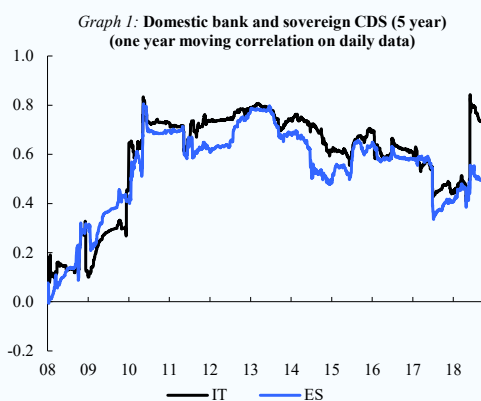
(6) In some specific cases within short timeframes during the crisis, bailouts and guarantees provided to banks have lowered banks' risk but actually raised sovereign risk reflecting the risk transfer.

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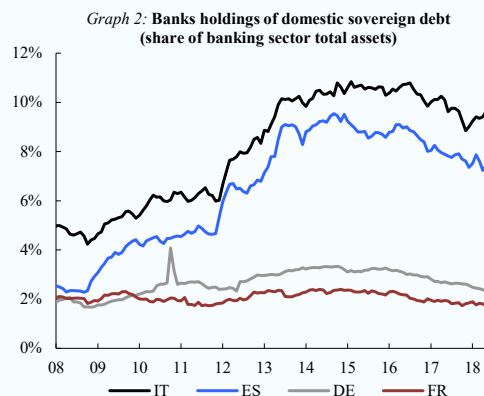
highly and positively correlated. Such correlations reflect the fundamental-based contagion due to the presence of links through the financial sector or the real economy. A decomposition of the sovereign-bank CDS correlation between common risk factors and domestic or idiosyncratic factors reveals a growing importance of the latter in euro area periphery countries after 2010.⁽⁷⁾

Graph 1 takes the example of the two closest and most representative countries in the euro area periphery in terms of bank sovereign interdependence: Italy and Spain. It confirms that sovereign-bank correlation started to increase rapidly after 2008 and peaked in 2010 at above 0.8. It then followed a progressive decline before May 2018 when a significant bounce occurred in Italy alone. The two countries have hence broken a long history of similarity on this issue with Italy now taking a different path from all other euro area countries, as a result of domestic, idiosyncratic factors.



Source: Bloomberg, own calculations.

One factor still underpinning the strong link between banks and their sovereigns is the domestic bias in banks' sovereign debt holdings. The exposure of banks to their sovereigns has, overall, increased in the euro area's 'peripheral countries' since 2008. Italy and Spain have experienced similar trends, with home biases peaking in 2014 and declining slightly since then. This year, however, the two countries have diverged: Italian banks have increased their holdings of domestic sovereign debt in a context of rising yields (see Graph 2), while Spanish banks have decreased theirs.



Source: ECB, own calculations.

A small increase in yields has only limited implications for bank capital ratios. In Italy, for example, a 100 bps. increase in yields leads to an average loss of 4% on banks' sovereign holdings, which account for about 10% of their total assets. This would dent bank capital ratios by about 0.4%. However, a more significant increase in yields and a rising exposure to their national debt would lead to more significant losses. At the same time, a rise in banks' holdings of domestic sovereign debt could take place at the expense of other assets, including loans (substitution effect), as the return on new acquisitions of sovereign debt improves and continues to benefit from the regulatory advantage of zero risk weighting. Such increase in banks' domestic sovereign exposures in response to increases in sovereign yields is no new phenomenon and in fact was widespread during the sovereign debt crisis. It does, however, suggest that banks may have distorted incentives that affect their responses to changes in their own sovereigns' risk.⁽⁸⁾

The bank-sovereign nexus during the euro area sovereign debt crisis led to higher bank interest rates for companies and households as well as lower lending volumes. While demand for loans played a role during the subdued economic growth during the crisis period, the banking sector's capacity and willingness to lend was clearly constrained in the most vulnerable Member States. Banks in these countries required higher interest rates not only because of the higher riskiness of borrowers but also due to their own balance sheet

⁽⁷⁾ See Georgoutsos D. and G. Moratis (2017). 'Bank-Sovereign contagion in the Eurozone: A panel VAR Approach'. *Journal of International Financial Markets, Institutions & Money* 48, pp 146-59.

⁽⁸⁾ See Battistini N., M. Pagano, S. Simonelli (2014). 'Systemic risk, sovereign yields and bank exposures in the euro crisis'. *Economic Policy* 29:78, pp 203-51.

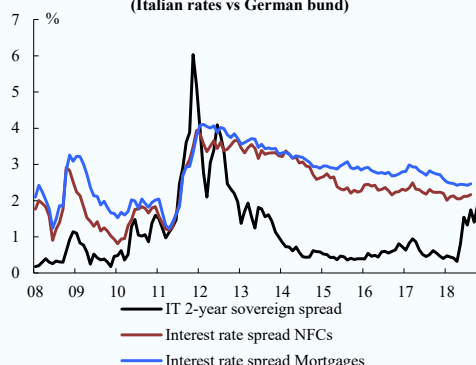
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pressures in the context of tensions in the sovereign debt markets.⁽⁹⁾

So far, the current tensions on the Italian sovereign debt market and the ongoing interplay between the country's sovereign and domestic banks have not led banks to raise interest rates and/or restrictions on loans to households and companies.⁽¹⁰⁾ During the crisis, higher sovereign and bank CDS spreads were rapidly transmitted to retail lending rates.⁽¹¹⁾

Graph 3: Italy: sovereign bond and bank lending rates spreads (Italian rates vs German bund)



Source: Macrobond, ECB.

This may be because there are a number of significant differences between the present situation and the situation in 2011/2012. First, retail interest rates since the crisis have declined far more slowly than the Italian two-year sovereign yield. This suggests that banks have maintained decent interest margins on retail loans and may explain a possible lag in the substitution effect from bank lending to better-yielding sovereign bonds⁽¹²⁾. Second, while risk premia emerged on banks' equity and bond markets, interest rates on deposits remained unchanged reflecting depositor confidence in the Italian banking sector (see Graph 4). Moreover, since 2012, the deposit base has increased and banks have reduced their reliance

on bond financing, leading to a more limited impact from current tensions. Third, the whole euro area economy enjoys currently a robust economic growth, whereas in 2012 it was still reeling from the 2009 economic downturn. This should limit banks' risk perceptions on their lending portfolios to the private sector. Fourth, the ECB's asset purchase programmes for sovereign bonds and corporate bonds have contributed to lower long-term yields in all euro area countries. Also, the ECB's targeted longer-term refinancing operations (TLTROs) are still running. The programme offers long-term funding at attractive conditions to banks in order to ease private sector credit conditions and stimulate bank lending to the real economy. Fifth, European banks, including in Italy, are currently in a far stronger position than they were during the crisis. They are overall much better capitalised and have more stable funding sources, which makes them able to absorb greater losses. Non-performing loans are still high in the most vulnerable Member States but have been on a declining trend for several years. Last but not least, the institutional framework has also changed, with deep regulatory reforms for the European banking sector aimed at addressing the bank-sovereign nexus. Europe's banking union has from the outset been politically driven by the need to sever the bank-sovereign vicious circle and allow for the effective transmission of monetary policy. However, while the first two pillars⁽¹³⁾ of the banking union have been implemented, the European banking union is not yet complete⁽¹⁴⁾. To achieve a fully functional banking union, the first two pillars need to be complemented by a credible common backstop to guarantee the credibility of the Single Resolution Mechanism. A European deposit insurance scheme (EDIS) is also needed to further weaken the link between banks and their sovereigns by ensuring that the level of depositor confidence in a bank would not depend on the bank's location.

⁽⁹⁾ See Darracq Pariès M., D. Moccero, E. Krylova, C. Marchini (2014). 'The Retail Bank Interest Rate Pass-Through: The Case of the Euro Area During the Financial and Sovereign Debt Crisis'. *ECB Occasional Paper* No. 155.

⁽¹⁰⁾ Latest ECB data for August show broadly unchanged bank interest rates and still rising bank lending volumes in all euro area countries. The latest July 2018 Bank Lending Survey from the ECB also shows no effect from sovereign tensions with ongoing loosening of credit standards in Italy and in the euro area as a whole.

⁽¹¹⁾ See E. Zoli (2013). 'Italian Sovereign Spreads: Their Determinants and Pass-through to Bank Funding Costs and Lending Conditions'. *IMF Working Paper* 84.

⁽¹²⁾ For 10-maturity, the Italian bonds are already yielding more than bank lending.

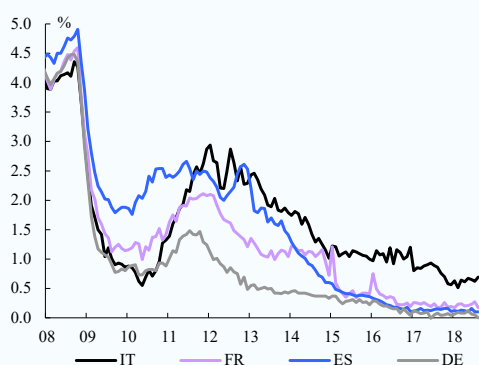
⁽¹³⁾ The single supervisory mechanism (SSM) and the single resolution mechanism (SRM)

⁽¹⁴⁾ See Bruegel paper by Isabel Schnabel and Nicolas Véron: Completing Europe's banking union means breaking the bank-sovereign vicious circle.

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Graph 4: Bank deposit interest rate (all agreed maturities)

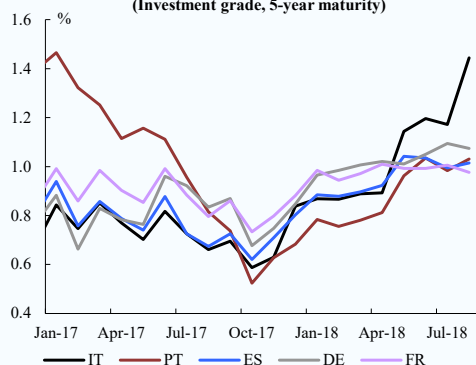


Source: ECB.

Sovereign-corporate bond market contagion

Yield patterns in the euro area's corporate bond markets suggest a contagion from the Italian sovereign to the corporate bond markets. Italian investment grade corporates have faced rising yields over the last few months leading to much higher yields for Italian corporations compared with corporations in other euro area countries (see Graph 5). This suggests an immediate reaction of bond investors who connected the Italian private sector with the country's sovereign. This contrasts with the inertia currently noticeable in the intermediation process of the banking sector. However, corporate bond markets and bank lending are not completely independent, as larger non-financial corporations can choose between the two. Rising funding costs on corporate bond markets should increase corporate demand for bank loans and, *ceteris paribus*, push lending rates higher. Such substitution effects between bank lending and bond markets have taken place since the crisis, with corporates issuing bonds at lower funding costs during periods of higher bank interest rates in several euro area member states.

Graph 5: Corporate bond yields (Investment grade, 5-year maturity)

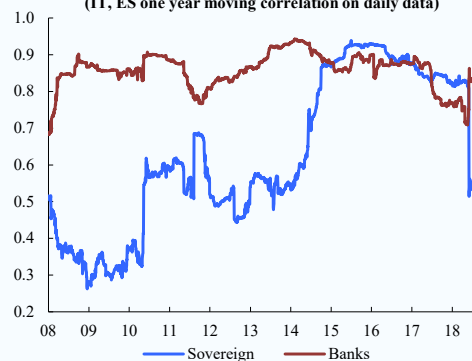


Source: Bloomberg.

Cross country contagion

A particular feature of the recent developments in euro area sovereign debt markets is the absence so far of contagion from the Italian sovereign to other Member States. Looking back, it appears that previously well-integrated bond markets in the euro area have fragmented along national lines during the crisis. Overall, core countries have benefited from flights to quality while peripheral countries have seen rising sovereign yields. When looking only at the euro area periphery, cross-country correlation picked up in 2010 reflecting the upward co-movement in sovereign yields. Since the crisis, the interdependence between the two most similar euro area countries, Italy and Spain, has further increased reflecting the joint reduction in yields, also helped by ECB policy⁽¹⁵⁾ (see Graph 6).

Graph 6: Cross-country sovereign and bank CDS (IT, ES one year moving correlation on daily data)



Source: Bloomberg, own calculations.

Following the results of Italy's election earlier this year, a significant decorrelation has taken place between the two sovereigns. At the same time, the high and rising correlation between banks' CDS spreads in the two countries suggests that the perceived riskiness of their respective banking systems remains closely linked. In fact, inter-bank CDS correlations have stayed high since 2008, reflecting the dense network of connections among banks, common risk factors, and the systemic risk of the euro area banking system as a whole.⁽¹⁶⁾ In such a context, a risk factor, even if localised only in one euro area country, has the ability to provoke a more generalised risk aversion in the euro area banking sector.

⁽¹⁵⁾ See Ehrmann M., M. Fratzscher (2017). 'Euro area government bonds – Fragmentation and contagion during the sovereign debt crisis'. *Journal of International Money and Finance* 70, pp 26-44.

⁽¹⁶⁾ See Black L., R. Correa, X. Huang, H. Zhou. 'The systemic risk of European banks during the financial and sovereign debt crisis'. *Journal of Banking & Finance* 63, pp 107-25.

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Conclusion

The re-emergence of risk aversion for the Italian sovereign debt this year has revealed a number of features as regards the potential contagion effects. While the bank sovereign nexus re-appeared clearly in Italy there is not yet full transmission of the sovereign stress to the private sector bank funding. The numerous differences with the situation that

prevailed during the euro area sovereign debt crisis do not allow us to conclude whether this transmission may be prevented or simply delayed. For the moment, the contagion to the non-financial sector appears only via bond markets with higher yields for Italian corporates while the contagion from the Italian sovereign to other euro area sovereigns has not operated.