The Sovereign-Bank Nexus and the Case for European Safe Bonds[76]

by Marco Pagano[77]

Abstract

During the euro debt crisis, banks' holdings of domestic sovereign debt amplified the transmission of sovereign stress to bank lending and solvency risk in stressed countries. Yet, current proposals to reform European banking regulation of bank sovereign exposures meet with obstacles, some structural-namely, the scarcity and asymmetric provision of safe assets-and others transitional-chiefly the danger that regulatory change may trigger instability in the sovereign debt market. But both types of obstacles can be overcome by introducing a synthetic security resulting from the securitization of euro-area sovereign debt – European Safe Bonds, or ESBies – and by providing regulatory incentives for banks to replace domestic debt holdings with this security.

1. Introduction

The nexus between governments and banks has been the hallmark of the euro-area sovereign debt crisis: in Greece, Ireland, Italy, Portugal and Spain,

76. JEL classification: E44, F3, G01, G21, H63. Keywords: sovereign exposures, sovereign risk, credit risk, diabolic loop, lending, euro debt crisis. Acknowledgments: Prepared for publication on *European Economy: Banks, Regulation, and the Real Sector*. I am grateful to Sam Langfield for providing very helpful comments and suggestions. This paper draws extensively on joint research with Carlo Altavilla, Markus Brunnermeier, Sam Langfield, Ricardo Reis, Stijn Van Niewerburgh, Saverio Simonelli and Dimitri Vayanos.

77. Università di Napoli Federico II, CSEF and EIEF.

indicators of sovereign and bank credit risk, such as CDS premia and bond yields, spiked together after the Greek bailout in 2010 and then subsided together in 2012 as the ECB committed to buy distressed sovereign debt. A growing amount of evidence shows that banks' holdings of domestic sovereign debt played a key role in exacerbating this nexus in stressed countries both during and after the crisis (Section 1). This begs the question of why European banking regulation is not reformed so as to encourage banks to reduce the strong home bias of their sovereign debt portfolio, by diversifying their sovereign holdings (Section 2). Currently, such reform proposals meet with obstacles, some of which are structural-namely, the scarcity of safe assets and their asymmetric provision in the euro area-and others transitional-chiefly the danger that regulatory change may trigger instability in the sovereign debt market. However, both types of obstacles can be overcome by introducing a synthetic security resulting from the securitization of euro-area sovereign debt – European Safe Bonds, or ESBies – and by providing regulatory incentives to banks to replace their domestic debt holdings with such as a security (Section 3).

2. Role of banks' sovereign holdings in the crisis

Banks' exposures to domestic sovereign risk via government bond holdings amplified the transmission of stress to the banking system: when the market value of sovereign bonds dropped due to heightened sovereign risk, banks that held these bonds suffered equity losses, which increased their default risk and hence their funding costs, forcing the most highly exposed ones to deleverage. This mechanism operated in reverse once the prices of stressed countries' debt recovered, after the famous "whatever it takes" speech by Draghi in July 2012: in this case, the banks that were most exposed to risky sovereigns experienced the largest capital gains, and this tacit recapitalization allowed them to expand lending more than other banks.

This account of the role of banks' sovereign holdings in the crisis is supported by an impressive amount of evidence. De Marco (2014) and Popov and van Horen (2014) show that the euro-area banks that turned out to have larger sovereign exposures in the European Banking Authority (EBA) stress tests participated less than less exposed banks in the syndicated loan market, and raised their

lending rates more sharply.[78] Acharya, Eisert, Eufinger and Hirsch (2015) combine syndicated loan data with company data, to investigate the real effects of the loan contraction triggered by the sovereign crisis. Altavilla, Pagano and Simonelli (2016) explore the role of sovereign exposures in the transmission of sovereign stress to euro-area banks by using novel monthly data on sovereign exposures, loans and lending rates for 226 euro-area banks from 2007 to 2015, which provide richer cross-sectional and temporal variation in bank sovereign exposures than the EBA stress test data used in earlier studies. They document that in stressed euro-area countries, the banks more exposed to the sovereign featured larger increases in solvency risk, sharper reductions in loans and more pronounced rises in lending rates than the less exposed banks. According to their estimates, this amplification effect is sizeable: in the vulnerable countries, a 100-basis-point increase in the domestic sovereign CDS premium translates into a rise of 31.5 basis points in the CDS premium of the bank with median exposure, while a 1-standard-deviation drop in the price of government bonds reduces the loan growth of the median domestic head bank by 1.4 percentage points, which is 20% of the standard deviation of loan growth.

Altavilla, Pagano and Simonelli (2016) also establish that sovereign exposures have a causal role in this amplification mechanism. This is important, as banks choose both loans and sovereign debt holdings. Hence, in principle causality could run from banks' loans to their sovereign holdings rather than the other way: sovereign distress may reduce loan demand by sapping entrepreneurial confidence, and may impair corporate creditworthiness, for instance for firms catering to the public sector. These drops in the amount or quality of loan demand may hit some banks more severely than others, and the worst-affected banks may end up substituting sovereign debt for corporate loans on the asset side. However, it turns out that the foreign subsidiaries of stressed-country banks cut back on lending in non-stressed countries in response to losses on their head banks' domestic sovereign portfolios, and these cuts were as large as those made by their head banks in lending at home, despite the resilience of loan demand in the more stable countries. Hence, reverse causality from changes in loan demand to sovereign exposures cannot be the whole story.

78. De Marco (2014) documents this finding also using yearly balance-sheet data on bank loans, besides syndicated loan data.

According to these studies, therefore, the domestic sovereign exposures of banks in fiscally vulnerable countries accentuated both the impact of sovereign stress until mid-2012 and that of its subsequent abatement, and thereby exacerbated the volatility of bank risk and lending in the euro-area periphery from 2008 to 2015. This evidence accords with the sovereign-debt feedback loop models of Acharya et al. (2014), Brunnermeier et al. (2016a), Cooper and Nikolov (2013), Farhi and Tirole (2014) and Leonello (2014), which show that sovereign exposures create the potential for inefficient equilibria, which have come to be known as "diabolic loops" or "doom loops": if banks are highly exposed to the domestic sovereign, pessimistic beliefs about government solvency that lead to sovereign debt repricing will inflict large losses on banks and trigger bailouts; these in turn increase the likelihood of government default, validating the initial pessimism. In these models, the larger the banks' sovereign exposures, the more extensive the region where these inefficient equilibria can arise.

In the euro-area context, the diabolic loop just described is aggravated by the highly asymmetric provision of safe sovereign bonds, owing to the strong differences in fiscal solvency of the national sovereigns. Germany supplies 83% of triple-A rated euro-denominated sovereign debt. This asymmetric provision of safe assets by one nation implies that when the diabolic loop is triggered within a country of the euro area, this triggers strong cross-border capital flows as investors seek safer sovereign bonds in which to invest, and correspondingly large spikes in sovereign yield differentials. While in the 2003-07 boom capital had flowed from non-vulnerable to vulnerable countries, since 2009 investors began to question the solvency of some euro area sovereigns, and short-term capital flows switched sign as investors sought safety above all else. This sudden reversal was exacerbated by a perceived risk that euro-denominated securities in certain countries would be redenominated into a new currency at a devalued rate of exchange. Cross-border flight-to-safety compressed non-vulnerable nations' borrowing costs, allowing them to enjoy a "safety premium", while it raised vulnerable sovereigns' borrowing costs correspondingly, and thereby hurt even more their fiscal solvency. The absence of a union-wide, symmetrically provided safe asset therefore amplified the diabolic loop triggered by the change of investors' perception of sovereign solvency since 2010.

3. Prudential regulation of bank sovereign exposures

Insofar as it affects the incentives to invest in domestic sovereign debt, the prudential regulation of banks is of paramount importance in determining the contribution of sovereign exposures to the transmission of sovereign stress to banks' risk and lending decisions. Currently, euro-area prudential regulation gives preferential treatment to sovereign debt compared to loans to firms and households: unlike the latter, debt issued by euro-area sovereigns entails no capital charge (it is zero risk-weighted in measuring bank assets' risk) and is not subject to any portfolio concentration limit. The absence of any capital charge and of any limit to sovereign exposures induces banks to invest in risky sovereign debt rather than other assets of similar riskiness. The effects of this distortion are amplified during financial crises when banks' capital requirements bind-thereby strengthening banks' incentives to economize on capital by substituting into holdings of euro-area sovereign bonds (and out of other domestic investment). Furthermore, the zero risk weights on sovereign debt enables politicians to encourage local banks to buy sovereign bonds. In sum, the regulatory status quo gives banks a strong incentive to load up on sovereign risk in a socially inefficient way.

The evidence discussed in the previous section is consistent with the view that such a preferential regulatory treatment of banks' sovereign exposures is questionable, since these exposures amplified the transmission of sovereign stress to bank risk and lending in stressed euro-area countries. And this amplification effect may be even larger going forward, as in stressed countries banks expanded their holdings of risky public debt during the crisis and trimmed them back only slightly afterwards: in the first quarter of 2015, these banks' domestic sovereign exposures still stood at 7% of their assets, compared with 4% in 2010-11. Hence, should there be a resurgence of sovereign stress comparable to that experienced in 2010-11, the amplification effects on bank lending to be expected in stressed countries would be proportionately greater.

In principle, banks could be encouraged to reduce the extreme domestic bias of their sovereign portfolio by imposing either positive risk weights on sovereign debt in computing banks' capital or limits on banks' exposure towards each single sovereign issuer, thus requiring them to diversify their sovereign portfolios. Indeed, a key Euro-area policy maker such as Danièle

Nouy, Chair of the Supervisory Board of the Single Supervisory Mechanism, favors adopting both of these measures, as stated in a recent interview:[79]

> "We learnt from the crisis that there is no such thing as zero credit risk for assets – so we have to address this issue regarding sovereigns. We have to have capital requirements based on risk weights for sovereign exposures ... For me, it is not only an issue of capital requirements for the sovereigns ... It is also a matter of large exposure risk. So, large exposure limits should be applied."

So what is holding back regulatory reform in this area? There are two types of obstacles: first, transitional problems; second, resistance by the policy-makers of the countries that experienced stress during the crisis, who are afraid of adverse consequences for their governments and domestic banks.

Phasing in new regulation in this area would have to face undeniable challenges. On the one hand, the response of banks' portfolio choices to risk weights on sovereign exposures is unknown, and these weights may themselves behave procyclically in response to changes in sovereign ratings, triggering procyclical behavior in banks' exposures and balance sheets. On the other hand, setting limits to exposures to each single sovereign may require most euro-area banks to undertake very large portfolio adjustments. In both cases, regulatory changes may result in unpredictable shifts in banks' sovereign debt portfolios, and equally unpredictable gyrations in relative yields in the euro-area sovereign debt market. For instance, applying larger risk weights on the public debt of more vulnerable countries may induce euro-area banks to engage in a generalized sell-off of this debt and in massive purchases of debt issued by fiscally solid countries, hence leading to a new euro-area sovereign debt crisis.

However, the concerns of the policy-makers in Italy, Spain and Portugal go beyond these transitional problems: they fear that such a reform, by reducing the demand for public debt by local banks, will face their sovereigns with a permanently higher cost of debt service, and deprive them of the option to lean on domestic banks to buy public debt at times of crisis. Moreover, insofar as local banks will retain a home bias in their sovereign portfolios, they would face

79. Interview of Danièle Nouy with Nihon Keizai Shimbun, Nikkei, 8 October 2015.

greater capital charges, or else deleverage, thereby triggering a drop in bank loans-another unwelcome prospect for these countries' policy-makers. These concerns stem from a structural problem in the provision of safe assets in the euro area: safe sovereign debt is relatively scarce and asymmetrically provided, with Germany supplying 83% of triple-A rated euro-denominated sovereign debt. Therefore a regime that encourages the holdings of safer sovereign debt by banks is seen by these policy-makers as favoring Germany at the expenses of their countries.[80]

But none of these problems is unsolvable. Indeed, the introduction of European Safe Bonds (ESBies) proposed by Brunnermeier et al. (2011, 2016a, 2016b) would provide a way to address both transitional and structural problems, as explained in the next section.

4. The case for ESBies

The idea at the basis of ESBies is simple: to create a synthetic euro-wide safe asset by securitizing a GDP-weighted pool of euro-area government bonds. ESBies would be the senior tranche obtained from the securitization of this diversified sovereign bond portfolio. More specifically, the issuers of these bonds-either financial institutions or public institutions such as the European Investment Bank-would buy a GDP-weighted portfolio of bonds from euro-area sovereigns, and use them as collateral to issue two securities. The first security, namely ESBies, would be a senior claim on the payments from the sovereign bonds held in the portfolio. The second security, European Junior Bonds (EJBies), would be a junior claim on these payments-that is, it would be first in line to absorb losses arising from the pool of sovereign bonds that back these issues.

Owing to the double protection stemming from diversification of country-specific risk and from their seniority, ESBies would have virtually no exposure to sovereign risk, and therefore would be an ideal asset for euro-area banks to diversify their sovereign portfolios. The baseline simulations reported by Brunnermeier et al. (2016b) show that ESBies with a subordination level of

80. See the remarks by the Governor of the Bank of Italy in Visco (2016) for a clear and detailed presentation of these (and other) concerns about current proposals to reform the regulation of banks' sovereign exposures.

20% (or more) would have an expected loss rate lower than German sovereign bonds. Accordingly, they should receive a zero weight in the calculation of banks' regulatory capital, and not be subject to any large exposure limit. This would encourage euro-area banks to hold ESBies, rather than the riskier bonds issued by their respective sovereigns. Hence, banks could avoid the diabolic loop between their own solvency and that of their sovereign. The availability of such securities would also ensure that flight-to-safety capital flows occur across the two tranches produced by the securitization (i.e. from EJBies to ESBies) rather than across national boundaries, thereby avoiding fire sales of national sovereign bonds.

At least as importantly, the availability of ESBies would overcome the above-mentioned structural problems that currently prevent a meaningful reform of the regulation of banks' sovereign exposures: being backed by sovereign bonds issued by all euro-area governments, they would enable fiscally vulnerable countries to participate in the supply of the safe asset that banks are encouraged to hold. The availability of ESBies would also overcome the current scarcity of safe assets in the euro area: according to the baseline simulations in Brunnermeier et al. (2016b), if the bonds underlying ESBies amounted to 60% of euro-area GDP, ESBies would generate € 2.7tn of additional safe assets-more than doubling the supply of AAA-rated safe assets generated by euro-area sovereigns relative to the status quo.[81]

The availability of ESBies would also help to address the transitional obstacles to reforming the regulation of bank sovereign exposures: they could be used to "guide" banks' portfolio reallocation in the wake of such a reform. Specifically, to ease the transition, policy-makers and issuers of ESBies could offer to "swap" a portfolio of sovereign bonds for ESBies and EJBies at pre-set prices. These prices should be set in accordance with the equilibrium market value of sovereign bonds. To avoid market manipulation, they could be set with reference to historical market values, for example over a specific time interval. To induce banks to participate in the swap and to avoid sudden

81. More specifically, consider that currently the amount of AAA-rated sovereign debt is € 2.6tn in the euro area. By securitizing a sovereign bond pool amounting to 60% of euro-area GDP, the issuers of ESBies would absorb € 2.1tn of this safe debt, thus leaving € 0.6tn safe debt directly from national sovereigns. Choosing a 20% subordination level, the securitization would produce ESBies with a face value of € 4.8tn, according to Brunnermeier et al. (2016b). Therefore, the issuance of ESBies would increase the supply of safe assets from € 2.1tn to € 4.8tn.

increases in capital requirements, regulators could apply a zero risk-weight to EJBies received from the swap, but this risk-weight exemption would be a transitional arrangement to be applied to EJBies received from the swap. On any additional amounts of EJBies bought after the initial swap, banks would be subject to positive risk weights-indeed, such risk weights would have to be set at a sufficiently high level to prevent any regulatory arbitrage by banks, as explained by Brunnermeier et al. (2016b).

Last but not least, ESBies could be introduced without any change in EU legislation, and do not imply any joint liability by euro-area member states. In this sense, they are very different from all proposed types of Eurobonds or Eurobills, which do imply such joint liability. Hence, there is no substantial political or legal obstacle to their creation. Their successful issuance requires however euro-area governments to set common standards for ESBies and encourage their issuance. A key incentive to their issuance would be to reform the treatment of sovereign exposures in banking regulation, which currently is not sensitive to risk, and recognize their status of "safe asset" in the context of such a reform. Hence, the introduction of ESBies and the reform of the treatment of bank sovereign exposures are complementary policies: on one hand, the availability of ESBies will allow a smoother diversification of banks' sovereign bond holdings, easing the transition to the new prudential regime; on the other hand, the new regime will raise banks' demand for safe sovereign debt securities, thus boosting the demand for ESBies.

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