Box 2.3
THE SOVEREIGN-BANK NEXUS

In certain contexts, the existence of a high number of financial interconnections between banks and the public sector may pose risks to financial stability. The interconnections exist primarily because banks are typically significant holders of government debt securities and, furthermore, fiscal intervention is perceived as being the last resort in the event the banking sector faces solvency problems. Potential banking system or sovereign problems may result in a doom loop. The doom loop between the banking system and the sovereign materialised directly following the global financial crisis and in the subsequent sovereign debt crisis of 2012 which affected several European countries. In the wake of the global pandemic, the ICO guarantees represent an interconnection shared by banks and the public sector with the corporate sector.[1] This box aims to describe how these nexus work and review the materiality of the risk to the Spanish banking system stemming from the interconnections with the sovereign after the outbreak of the global pandemic.

The sovereign-bank nexus can create feedback loops through two fundamental channels, as shown in Figure 1, which are separate from the indirect nexus with the non-financial corporate sector.[2] First, problems in the banking system spread to the sovereign when the latter is expected to bail out a bank. Here, the expected budgetary cost associated with the bail-out increases the sovereign's financing costs. Second, a drop in the price of sovereign debt impairs banks' sovereign debt holdings on their balance sheets. This is particularly pronounced when these holdings are significant and are mostly measured at market value. This spillover from the sovereign to banks drives up the cost of bank financing. Consequently, lending by the banking system contracts, generating a tightened "liquidity channel" (see Bocola (2016))[3].

In both cases there may be feedback loops, as higher financing costs for the sovereign have an adverse effect on banks' balance sheets as holders of sovereign debt, and vice versa. In addition, the widespread increase in financing costs reduces economic growth. This has adverse implications both for the quality of banks' balance sheets and for government budget balances.

Banks' government debt holdings are key in the sovereign-bank nexus. These holdings are justified, among other reasons, due to banks' need to hold liquid assets on their balance sheets; government debt tends to be the safest and most liquid asset on the financial markets. Indeed, general government debt holdings account for the largest share of Spanish banks' debt securities (see Chart 1). Spanish banks' exposure to sovereign risk through these holdings has remained relatively stable since December 2019 (between 9.1% and 10.5% of total consolidated assets). This contrasts with the sharp rise in bank lending to the private sector during the initial phases of the pandemic.

As a percentage of total assets, Spanish banks' holdings of Spanish sovereign debt are greater than those of French and German banks, but smaller than those of Italian banks. However, it should be noted that Spanish and Italian banks' greater exposure largely originated from the global financial crisis. This is particularly true in the case of Spanish banks. Indeed, during the years leading up to the pandemic, the Spanish banking sector had gradually reduced its exposure to the Spanish sovereign. The COVID-19 crisis disrupted this trend, albeit without increasing exposure, as occurred during the global financial crisis (see Chart 3). Specifically, the main Spanish banks' holdings of government debt, as a percentage of total assets, fell slightly during the pandemic. The decrease was greater in fair-value debt holdings, which are those that create greater exposure to the doom loop, as their valuation is updated automatically on the basis of debt market fluctuations (see Chart 4). This trend is similar to that of other euro area banking systems, except Italy, where these holdings have risen.

Finally, in the wake of the global pandemic, the corporate sector's financial problems could become central to the

1 For a general discussion of interconnections across the corporate sector see Gross, C., And C. Pancaro (2021). Credit risk transmission during the pandemic: the sovereign-bank-corporate nexus, Box 4, ECB Financial Stability Review.

2 See Chapter 5 of K. J. Mitchener and C. Trebesch (2021), "Sovereign Debt in the 21st Century: Looking Backward, Looking Forward", NBER Working Paper Series WP28598 for a review of the literature and the empirical evidence, and E. Farhi and J. Tirole (2018), "Deadly Embrace: Sovereign and Financial Balance Sheet Doom Loops", Review of Economic Studies, Vol. 85(3), pp. 1781-1823.

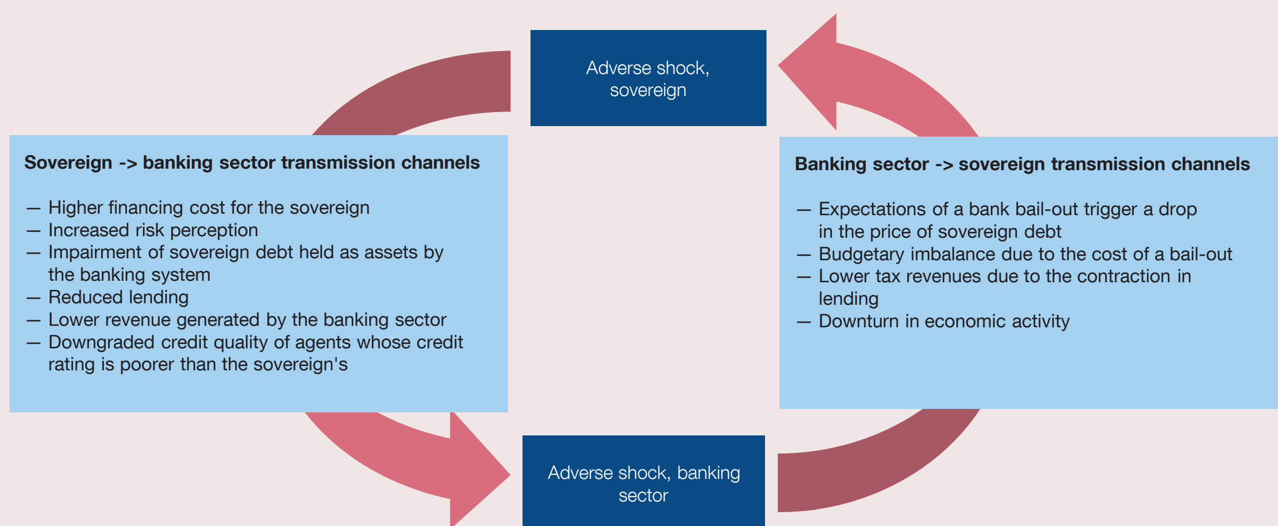
3 L. Bocola (2016), "The Pass-Through of Sovereign Risk", Journal of Political Economy, Vol. 124(4), pp. 879-926. There is also a "risk channel", as Bocola (2016) dubs it, where banks perceive private-sector assets as riskier in the face of expectations of a sovereign debt crisis and, as a result, preventively deleverage. This generates a feedback loop which further exacerbates the sovereign's position.

sovereign-bank nexus owing to the loan guarantee scheme for firms established by the ICO. Indeed, the policies implemented to channel credit to the corporate sector through ICO guarantees has led to an increase in the sovereign's contingent liabilities. The volume of ICO-backed lending to the corporate sector was close to 9% of GDP in June 2021, almost doubling the previous year's figure. This means that the banking sector would be less exposed to the potential impairment of loans to the corporate sector, since the public guarantees cover a significant portion of its loan portfolio. Specifically, loans with ICO guarantees account for 25% of total lending to the corporate sector and are equivalent to 40% of bank capital. However, an adverse shock to the sovereign would eventually affect the banking sector, through the feedback loop described above.

Economic policy action can significantly mitigate the risks of the sovereign-bank nexus. In the current context, the ECB's monetary policy response to the COVID-19 crisis, and other support measures implemented by the economic authorities, have all contributed to preventing them from materialising. Thus, low interest rates, liquidity facilities, including the launch of a new TLTRO programme and the asset purchase programmes have all kept the sovereign risk premium in check, despite the increase in government debt, and banks' funding needs have been satisfactorily met in a situation of marked economic downturn. These measures have also helped reduce the impairment of debtors' credit quality and the contraction in lending by banks, thus avoiding further deterioration of the economy and banking solvency.

However, the notable support provided by monetary policy is not without its risks. Many of these derive from a low interest rate environment potentially eroding certain elements of bank profitability.[4] Low profitability in the banking sector poses

Figure 1
SOVEREIGN-BANK NEXUS RISK CHANNELS OR DOOM LOOP (a)



SOURCE: Banco de España.

a The flowchart illustrates how an adverse shock to the financial valuation of the banking sector or the sovereign is transmitted to the other sector through different interconnection channels. The initial shock can originate from multiple sources, such as the materialisation of the costs of imbalances in the growth of lending in the banking sector, or an adverse shock to the sovereign's tax revenues.

4 In this connection, however, the evidence available shows a mixed final effect on profitability, owing to the containment of loan loss provisions made possible by low interest rates, especially in a particularly recessive scenario. The empirical discussion is addressed, inter alia, in: C. Pérez Montes and A. Ferrer (2018), "The impact of the interest rate level on bank profitability and balance sheet structure", Financial Stability Review, No 35; S. Claessens, N. Coleman and M. Donnelly (2017), "'Low-For-Long' Interest Rates and Banks' Interest Margins and Profitability: Cross-country Evidence", Journal of Financial Intermediation, Vol. 35, Part A; C. Altavilla, M. Boucinha and J. L. Peydró (2017), "Monetary policy and bank profitability in a low interest rate environment", Economic Policy, Vol. 33, Issue 96.

risks to financial stability, through various channels. First, it can encourage the search for greater yields by the banking sector, by raising or underestimating the risk profile of investments. This effect may be magnified as low profitability reduces the market value of banks, which discourages shareholders from properly assessing the risks.[5] Lastly, low profitability limits the growth capacity of capital and, therefore, of the solvency ratio.

The risks associated with the sovereign-bank nexus are therefore very different in an environment of low interest rates and GDP growth (persistent, more related to the generation and accumulation of interest income) from those prevailing during a period of a severe banking or sovereign crisis (concentrated in the short term, more related to financing costs and loan loss provisions and the materialisation of risks).

Chart 1
BANKING SECTOR DEBT SECURITY HOLDINGS, BY COUNTERPARTY (% OF TOTAL ASSETS) (a)

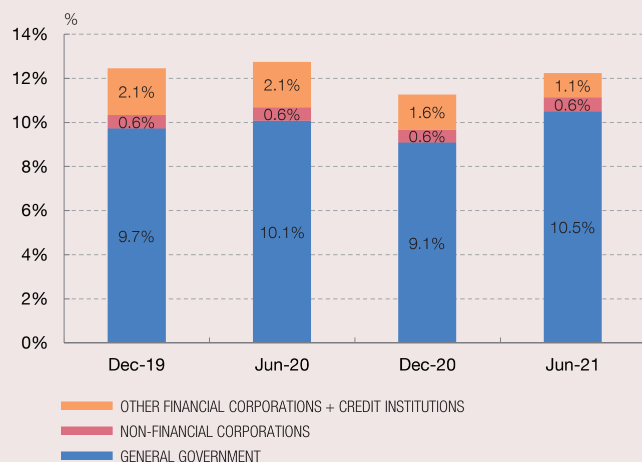


Chart 2
BANKING SECTOR NATIONAL SOVEREIGN DEBT HOLDINGS (% OF TOTAL ASSETS) (b)

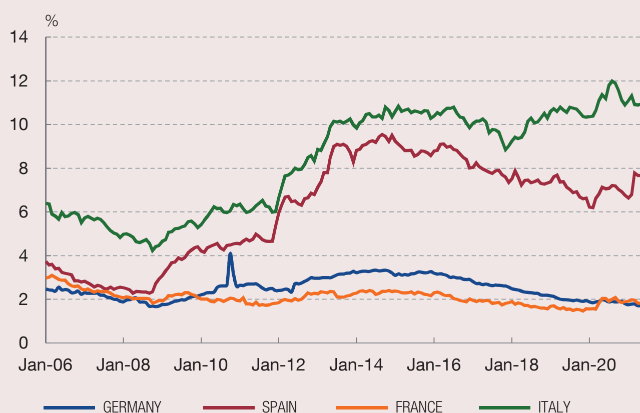


Chart 3
DISTRIBUTION OF SOVEREIGN EXPOSURES AS A % OF TOTAL ASSETS, BY COUNTRY (c)

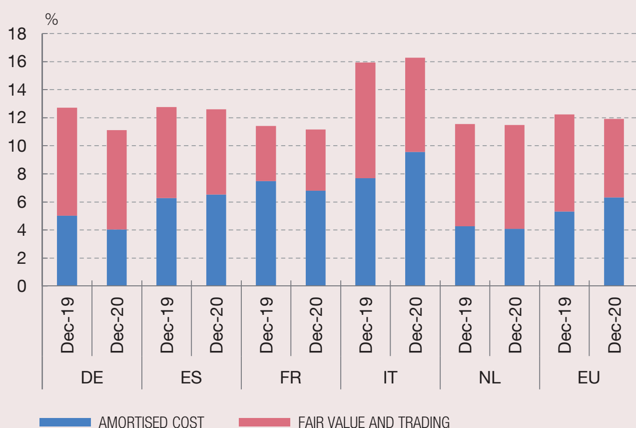
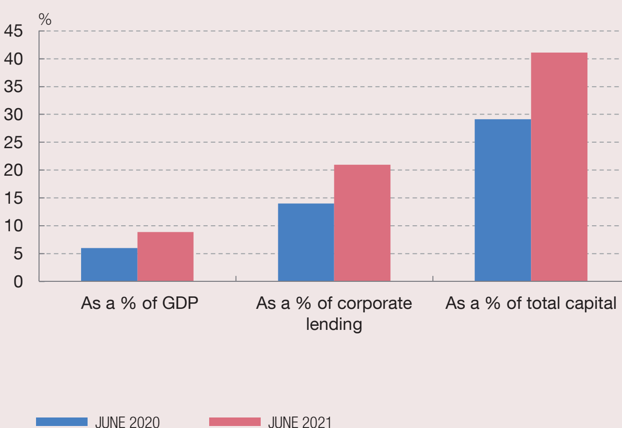


Chart 4
VOLUME OF LENDING TO THE CORPORATE SECTOR BACKED BY AN ICO GUARANTEE



SOURCES: Banco de España, Instituto de Crédito Oficial, SDW and European Banking Authority.

a Consolidated data. Total deposit institutions.
b Individual data. Sovereign debt refers only to debt securities issued by the sovereign.
c Consolidated data. Total sovereign exposure as a percentage of total assets for the sample of banks reporting for each jurisdiction to the EBA Dashboard. Sovereign exposure includes debt securities issued by the sovereign and other credit exposures thereto.

5 See S. Advjiev and J. M. Serena (2020), "Regulatory capital, market capital and risk taking in international bank lending", *BIS Working Paper* No 912.

Box 2.3
THE SOVEREIGN-BANK NEXUS (cont`d)

In short, the COVID-19 crisis has not entailed any significant changes for Spanish banks' exposure to Spanish sovereign risk, and the risk considerations identified in pre-pandemic years and associated with the low interest rate environment, which are very different from the doom-loop dynamics of the 2012 sovereign debt crisis, continue to take priority. However, the increase in public indebtedness and the important role played by the ICO guarantee schemes are an indication of potential vulnerabilities that need to be monitored going forward.