

# Sovereign loan guarantees and financial stability



Ivan de Lorenzo Buratta | Prometeia

Tiago Pinheiro | Banco de Portugal

*Keywords:* Financial stability, financial markets, banks, sovereign loan guarantees

*JEL codes:* E3, E44, G01, G21, O52

## Abstract

We analyze the effects of sovereign loan guarantees on financial stability in Portugal using a DSGE model. Sovereign loan guarantees decrease the default rate of banks and increase credit. On the other hand, guarantees increase the leverage and default rate of firms. These effects are larger the lower the sensitivity of the capital of banks to capital requirements. Behind these results are the reduction in regulatory risk-weights and the transfer of loan losses from banks to the sovereign brought by sovereign loan guarantees. A decomposition of the impact of sovereign loan guarantees suggests that insuring banks against loan losses can complement and enhance conventional macroprudential policy.

---

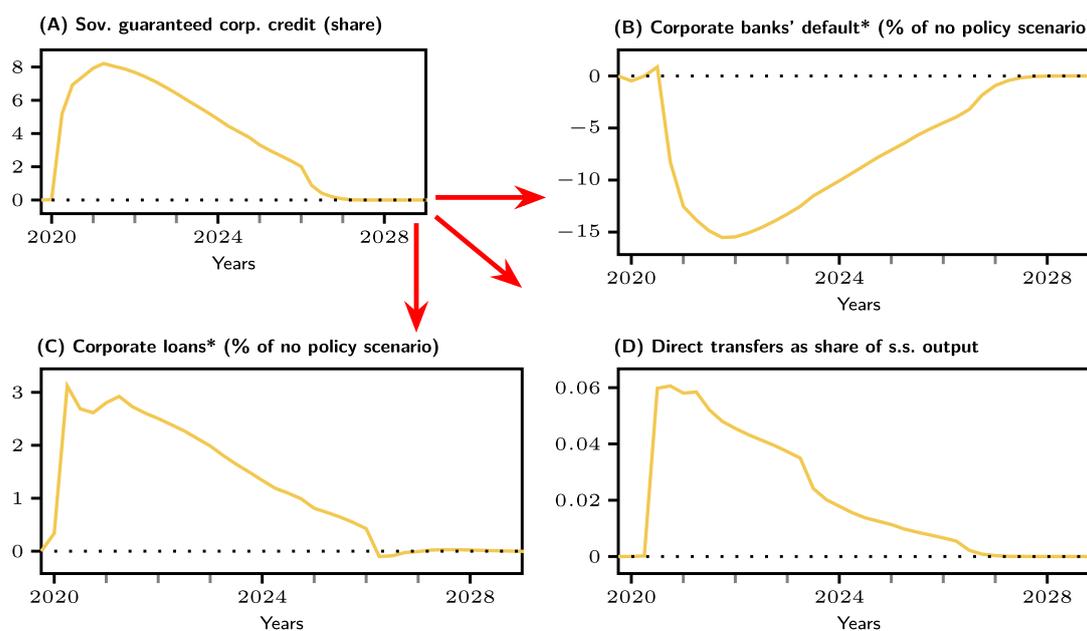
Disclaimer: The views expressed in this article are those of the authors and do not necessarily reflect the views of Banco de Portugal or the Eurosystem. Any errors and mistakes are ours.

Sovereign guarantees on firm loans are among the policy measures adopted to mitigate the effects of economic and financial crises, and they have been used extensively during the COVID-19 pandemic. This brief is an abridged version of [De Lorenzo Buratta and Pinheiro \(2025\)](#) in which we measure the impact of sovereign guarantees on Portugal's financial stability after an economic crisis. We focus specifically on how the guarantees affect the probability of default of banks and the level of credit to the economy.

To measure the effect of sovereign guarantees we use and extend the DSGE model in Clerc et al. (2015). We hit the model's steady-state with a series of shocks that mimic the forecasts of the evolution of the economy after the onset of the most recent crisis – the COVID-19 pandemic – and we compare the response of variables of interest in two scenarios: one with and another without sovereign guarantees. The sovereign guarantees are calibrated to match the terms and conditions of the COVID-19 sovereign guarantee program.

We find that sovereign guarantees reduce the default risk of banks, increase credit, and have a small and positive impact on output. On average, guaranteeing one percent of the banks' credit to firms over a year decreases the default rate of banks by 0.48 percent, increases credit and output by 0.32 and 0.01 percent, and has a fiscal cost of 0.005 percent of output.<sup>1</sup>

**Figure 1. The impact of the Portuguese COVID-19 sovereign loan guarantee scheme (A) on credit and banks' default rate (B and C) and its cost (D)**



Note: \* The lines correspond to  $(IRF_t^1 - IRF_t^0)/IRF_t^0 \cdot 100$ , where  $IRF_t^1$  are the impulse-response functions after the introduction of the loan guarantee scheme, and  $IRF_t^0$  are the impulse-response functions in a setting without loan guarantees.

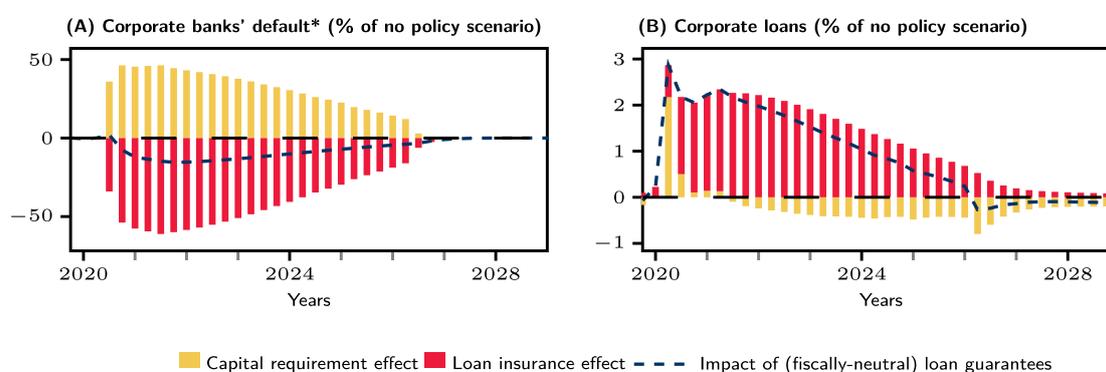
The sensitivity of the banks' capital to capital requirements is an important determinant of the policy's impact on the default rate of banks. Compared to the baseline calibration, if the elasticity of banks' capital to capital requirements is 60 percent smaller, then the decrease in the default rate of banks due to the sovereign guarantee scheme is 260 percent larger. Similarly, the guarantee fee is a key driver of the policy's fiscal cost. When the fee drops by 100 percent relative to the baseline calibration, the yearly fiscal cost increases by 65 percent.

<sup>1</sup> The quantitative effects presented in the brief are specific to the Portuguese calibration but the qualitative effects generalize. Specifically, results strongly depend on the size of the scheme, the elasticity of banks' capital to capital requirements per unit of credit, the guarantee fee, the share of credit to households, the pre-crisis firms' default probability, the COVID-19 shock. The underlying parameters on which these values depend are likely to vary by country.

Our results are explained by two key effects of sovereign guarantees. Guarantees transfer loan losses from banks to the sovereign and reduce the regulatory risk-weights on firm loans. Banks, operating in a competitive environment, respond to lower losses and lower risk-weights with more credit to firms and less bank capital. Firms use the additional credit to invest more than they would in a setting without sovereign guarantees, and output recovers faster. At the same time, the additional credit to firms implies higher leverage and higher firms' default rate. In contrast, the default rate of banks decreases. The capital of banks reduces by less than the expected credit losses transferred to the sovereign, thus increasing the banks' capacity to withstand losses on the loans without sovereign guarantees.

To further understand the impact of sovereign loan guarantees, we decompose it into a 'capital requirement' effect and a 'loan insurance' effect. The capital requirement effect measures the impact from reducing regulatory risk-weights on guaranteed loans. The loan insurance effect measures the impact from transferring to the sovereign banks' loan losses on guaranteed loans. In this decomposition we use fiscally-neutral sovereign guarantees. We want to exclude effects arising from subsidies implicit in the level of the guarantee fee.

**Figure 2. Decomposition of the impact of sovereign loan guarantees**



We find that the 'capital requirement' effect leads to an increase in the banks' default rate and to a temporary increase in the firms' credit and output in the initial stages of the loan guarantee program followed by a posterior decrease – a typical stabilizing effect. The 'loan insurance' effect, on the other hand, decreases the banks' default rate, more than compensating the 'capital requirement' effect. It significantly increases credit to firms throughout the entire loan guarantee program, and it also contributes to the increase in output.

This decomposition is informative for macroprudential policy because the 'capital requirement' effect is akin to a macroprudential capital buffers' release. Results suggest that the positive effects of a conventional loosening macroprudential policy can be enhanced and the negative effects can be compensated with an insurance on banks' loan losses. We interpret results with caution. Loan loss insurance has costs even if it is fiscally neutral – e.g. moral hazard costs in loan origination and monitoring – which are not considered in our analysis.

The dual role of loan guarantees as both a substitute and complement of buffers' release is a novel insight that contributes to the growing literature on the interaction between fiscal measures and macroprudential policy. Additionally, it is consistent with the results in Mathur et al. (2023), Wong et al. (2024) and Dursun de Neef et al. (2022). They find that the impact of capital buffer releases on credit during the COVID-19 crisis was stronger in sectors or countries with less loan guarantees support.<sup>2</sup> This empirical result suggests that lenders prefer to expand credit with guarantees, even though releasing buffers provides an opportunity to increase credit without needing additional capital.

We explore alternative designs of the scheme to assess the impact of its size, duration and timeliness. Increasing the scheme's size enhances its effect on bank default, on credit, and on economic recovery but entails higher expected fiscal costs. Extending the maturity of sovereign guarantees has a negligible effect on bank default and credit. But it

<sup>2</sup> This result is not found in [Bedayo and Galán \(2024\)](#). They show that controlling for fiscal aid – including loan guarantees – does not affect the impact of buffers release on loans.

increases the benefits to the economy and postpones the drop in output associated with the phasing out of the scheme. Finally, delaying the implementation of the scheme past the quarter of the COVID-19 shock would lengthen the economic recovery and increase the banks' default probability at the time of the shock.

## References

- Bedayo, Mikel and Jorge E. Galán (2024), "The Impact of Countercyclical Capital Buffer on credit Evidence from its Accumulation and Release Before and during COVID-19." Working Papers 2411, Banco de España.
- Clerc, Laurent, Alexis Derviz, Caterina Mendicino, Stephane Moyen, Kalin Nikolov, Livio Stracca, Javier Suarez, and Alexandros P. Vardoulakis (2015). "Capital Regulation in a Macroeconomic Model with Three Layers of Default." *International Journal of Central Banking*, 11(3), 9–63.
- De Lorenzo Buratta, Ivan and Tiago Pinheiro (2025). "[Sovereign loan guarantees and financial stability](#)." *Journal of Banking & Finance*, 178, 107483.
- Dursun-de Neef, H Özlem, Alexander Schandlbauer, and Colin Wittig (2023). "Countercyclical capital buffers and credit supply: Evidence from the COVID-19 crisis." *Journal of Banking & Finance*, 154, 106930.
- Mathur, Aakriti, Matthew Naylor, and Aniruddha Rajan (2023). "Useful, usable, and used? Buffer usability during the Covid-19 crisis." Bank of England working papers 1011, Bank of England.
- Wong, Eric, Kelvin Ho, Andrew Wong, and Vincent Pok Ho Lo (2024). "Effects of COVID19 support measures on bank lending: Lessons from the release of countercyclical capital buffer and loan guarantee schemes in Hong Kong." *Pacific Economic Review*, 29(3), 299–327.

## About the author(s)

**Ivan De Lorenzo Buratta** is a Senior Economist in Prometeia's Financial Markets and Intermediaries Analysis Department since 2024. Previously, he worked as Economist in the Macroeconomic Policy Division within the Financial Stability Department of Banco de Portugal. He holds a PhD in Economics, Law and Institutions and a Master's degree in International and Development Economics from University of Rome "Tor Vergata". His recent research interests include: the impact of macroprudential policies and other policy measures relevant to financial stability, the development of early warning risk indicators to support macroprudential policy decision, the implications of ESG issues for financial risk and stability - namely climate, cyber, and geopolitical risk.

**Tiago Pinheiro** is a Senior economist at the Financial Stability Department of Banco de Portugal since 2019. Tiago has done applied and academic research on credit risk, loan pricing, earnings manipulation, on the regulation of credit cards, and on financial development and business cycles. Tiago holds a Ph.D. in Economics from the University of Chicago.

---

SUERF Policy Notes and Briefs disseminate SUERF Members' economic research, policy-oriented analyses, and views. They analyze relevant developments, address challenges and propose solutions to current monetary, financial and macroeconomic themes. The style is analytical yet non-technical, facilitating interaction and the exchange of ideas between researchers, policy makers and financial practitioners.

SUERF Policy Notes and Briefs are accessible to the public free of charge at <https://www.suerf.org/publications/suerf-policy-notes-and-briefs/>.

The views expressed are those of the authors and not necessarily those of the institutions the authors are affiliated with.

© SUERF – The European Money and Finance Forum. Reproduction or translation for educational and non-commercial purposes is permitted provided that the source is acknowledged.

Editorial Board: Ernest Gnan, David T. Llewellyn, Donato Masciandaro

Designed by the Information Management and Services Division of the Oesterreichische Nationalbank (OeNB)

SUERF Secretariat  
c/o OeNB, Otto-Wagner-Platz 3A-1090 Vienna, Austria  
Phone: +43 1 40 420 7206  
E-Mail: [suerf@oenb.at](mailto:suerf@oenb.at)  
Website: <https://www.suerf.org/>