Box 3

PUBLIC DEBT EXPANSION AND BANK CAPITALISATION IN LATIN AMERICA: THE ROLE OF INSTITUTIONAL QUALITY[1]

Rising public debt strengthens the sovereign-bank nexus, particularly in Latin America, where banks have relatively high exposure to government debt. A key variable is institutional quality: in countries with better regulation, losses arising from fiscal deterioration are recognised earlier, whereas in weaker regulatory environments, balance sheet adjustment is delayed and may hide vulnerabilities. Therefore, during episodes of fiscal stress, bank capital ratios, regulatory quality and other prudential indicators should be monitored to properly assess the solvency of the financial system.

The interplay between public finances and financial system stability has become increasingly important in recent years. The rise in public debt across numerous economies has strengthened the sovereign-bank nexus, increasing financial institutions' exposure to developments in the fiscal position. Although government debt issuance is a standard instrument for financing governments, persistent increases in indebtedness may worsen perceptions of sovereign risk and affect the strength of bank balance sheets, especially in economies where government securities account for a significant share of banks' assets.

In Latin America, this nexus is particularly important. Financial markets are characterised by the large share of savings intermediation conducted by banks, and by credit institutions' significant participation in domestic sovereign debt markets. In 2024, bank exposures to the public sector accounted for around 17% of bank assets in emerging market economies, compared with approximately 6%-7% in advanced economies.[2] As for Latin America, Argentina, Guyana, Mexico and Brazil recorded public sector exposures exceeding 20% of bank assets; El Salvador and Guatemala recorded exposures of between 10% and 20%; and Bolivia, Colombia, Costa Rica, the Dominican Republic, Ecuador, Honduras, Nicaragua, Panama, Paraguay, Peru and Uruguay had exposures below 10% (Table 1).[3]

Against this background, the financial system's capacity to weather episodes of fiscal stress is central to preserving financial stability and preventing a deterioration in public finances from ultimately amplifying fluctuations in the financial cycle. An increase in public debt may affect banks through various channels. A deterioration in the fiscal position is usually accompanied by higher sovereign risk premia, valuation losses in government debt portfolios, tighter financing conditions and a worsening macroeconomic outlook. These factors may simultaneously weaken the value of bank assets and the credit quality of households and firms, reducing banks' capacity to absorb losses and maintain the flow of credit to the economy. Farhi and Tirole (2018)[4] formalise these amplification mechanisms and show that their intensity increases with the home bias of banks' portfolios.

Table 1
Public debt, banking system and regulatory quality

Countries	Bank exposure to the non-financial public sector as a percentage of total assets (%)	Average public debt-to-GDP ratio (%)	Regulatory quality dimension (a)
Advanced economies	6	107.6	1.24
Emerging economies	17	69.9	-0.39
Latin America	12	70	-0.15

SOURCE: Wezel, Barrail and Dehmej (2026) for the second column, IMF World Economic Outlook (WEO) for the third column, and the regulatory quality dimension of the World Bank's worldwide governance indicators for the fourth column.

a The regulatory quality dimension ranges from -2.5 (lowest quality) to +2.5 (highest quality).

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2 By region, the highest average exposures in 2024 were observed in sub-Saharan Africa and in the Middle East and Central Asia, both at close to 22% of bank assets. In Asia-Pacific and Europe they ranged from around 8% to 11%. In the western hemisphere, comprising North America, Latin America and the Caribbean, the exposure was close to 12%, after declining to 9% for much of the 2010s and rising again after the pandemic. For further details of this analysis, see T. Wezel, Z. Barrail and S. Dehmej. (2026). "The Sovereign-Bank Nexus in Emerging Markets and Developing Economies: Trends, Determinants, and Macrofinancial Implications". IMF Working Paper, 2026/113.

3 These data cover central and sub-national government and non-financial public corporations, and are therefore broader than the general government debt measure used in the econometric exercise in this box.

4 E. Farhi and J. Tirole. (2018). "Deadly Embrace: Sovereign and Financial Balance Sheets Doom Loops". *The Review of Economic Studies*, 85(3), pp. 1781-1823.

Box 3

PUBLIC DEBT EXPANSION AND BANK CAPITALISATION IN LATIN AMERICA: THE ROLE OF INSTITUTIONAL QUALITY (cont'd)

However, the strength of the nexus may also depend on each economy's institutional quality and, in particular, on the quality of its regulatory and supervisory framework, insofar as both play a decisive role in determining how these shocks are reflected on bank balance sheets. Stronger frameworks may help identify asset deterioration at an early stage, require provisioning or recapitalisation, and support a more orderly balance sheet adjustment. In weaker institutional environments, regulatory forbearance, delayed loss recognition and constraints on recapitalisation may shift the adjustment further into the future. Consequently, two banking systems with similar exposures may follow very different capitalisation paths after the same deterioration in the fiscal position.[5]

In the context of Latin America, this box discusses the findings of Giraldo, Giraldo, Gómez-González and Uribe (2026),[6] who estimate how banks' equity-to-assets ratios respond to changes in the public debt-to-GDP ratio and how that response varies with each country's institutional quality. To this end, the local projection methodology proposed by Jordà (2005)[7] is used, adapted to a panel data structure with bank-level fixed effects (Jordà, Schularick and Taylor, 2020;[8] Adämmer, 2019[9]). The dependent variable is the equity-to-total-assets ratio[10] of each bank,[11] while the regressor of interest is each country's public debt-to-GDP ratio.[12] This approach estimates directly the path of bank capitalisation following an increase in public debt, without imposing restrictions on the dynamics of the adjustment process. It is especially suitable when the focus is on comparing the speed and scale of the response in different institutional environments.

To verify whether the link between bank capital and public debt varies based on institutional quality levels, the analysis uses the state-dependent local projection approach of Auerbach and Gorodnichenko (2012, 2013).[13] This approach uses a logistic function to identify two representative states of regulatory quality, corresponding to the 25th and 75th percentiles of the regulatory quality dimension of the worldwide governance indicators.[14] The analysis also includes bank-level fixed effects and a set of macroeconomic control variables, such as real GDP growth and inflation, together with bank-specific characteristics including size, profitability and portfolio quality. The available sample covers the period 2000-24 and includes 2,462 banks from 139 countries and 23,305 bank-year observations (for further details, see Giraldo, Giraldo, Gómez-González and Uribe, 2026).

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5 The literature also identifies structural factors that may interact with institutional quality. In emerging market economies, shallow capital markets, limited access to external funding, a significant presence of state-owned banks and favourable prudential treatment of sovereign debt may strengthen the nexus. Wezel, Barrail and Dehmej (2026) find that public debt, deposit rates and non-performing loans are robust correlates of banks' sovereign exposures.

6 C. Giraldo, I. Giraldo, J. E. Gómez-González and J. M. Uribe. (2026). "Bank capital adjustment to public debt shocks: The role of institutions in emerging markets". *Emerging Markets Review,* 73, 101497.

7 Ò. Jordà. (2005). "Estimation and inference of impulse responses by local projections". *American Economic Review,* 95(1), pp. 161-182.

8 Ò. Jordà, M. Schularick and A. M. Taylor. (2020). "The effects of quasi-random monetary experiments". *Journal of Monetary Economics,* 112, pp. 22-40.

9 P. Adämmer. (2019). "lpirfs: an R package to estimate impulse response functions by local projections". *The R Journal,* 11(2), pp. 421-438.

10 Also known as the equity ratio. It measures the share of a company's assets financed by equity rather than debt.

11 This measure prevents the favourable regulatory treatment of sovereign debt, which often receives low or zero risk weightings, from concealing balance sheet strains. At the same time, a change in the ratio may stem from changes in either equity or the volume of assets, meaning that an increase does not necessarily imply improved solvency.

12 Most empirical evidence on the so-called sovereign-bank nexus has focused on market variables, such as sovereign risk premia, government bond spreads or the share prices of financial institutions (see, for example, J. E. Gómez-González, J. M. Uribe, O. M. Valencia and B. Kim. (2025). "Doom loops in Latin America". *Emerging Markets Review,* 68, 101334). Although these indicators can be used to assess market perceptions of risk, they provide only a partial view of the implications of fiscal deterioration for banking system solvency. From a financial stability perspective, it is equally important to analyse how banks' capital levels evolve, since capitalisation is the first line of defence against unexpected losses and determines the banking system's capacity to continue financing the economy during episodes of stress.

13 A. J. Auerbach and Y. Gorodnichenko. (2012). "Measuring the output responses to fiscal policy". *American Economic Journal: Economic Policy,* 4(2), pp. 1-27. A. J. Auerbach and Y. Gorodnichenko. (2013). "Output spillovers from fiscal policy". *American Economic Review,* 103(3), pp. 141-146.

14 This dimension summarises the government's ability to formulate and implement policies and the predictability of the regulatory environment, but does not directly measure the intensity or effectiveness of banking supervision (D. Kaufmann, A. C. Kraay and M. Mastruzzi (2011). "The worldwide governance indicators: Methodology and analytical issues". *Hague Journal on the Rule of Law,* 3(2), pp. 220-246).

Consequently, timely loss recognition, supervisory action and recapitalisation are mechanisms consistent with the estimated responses. Moreover, given this identification strategy, the estimates should be interpreted as conditional dynamic associations, rather than as the causal effects of exogenous fiscal shocks.

Box 3

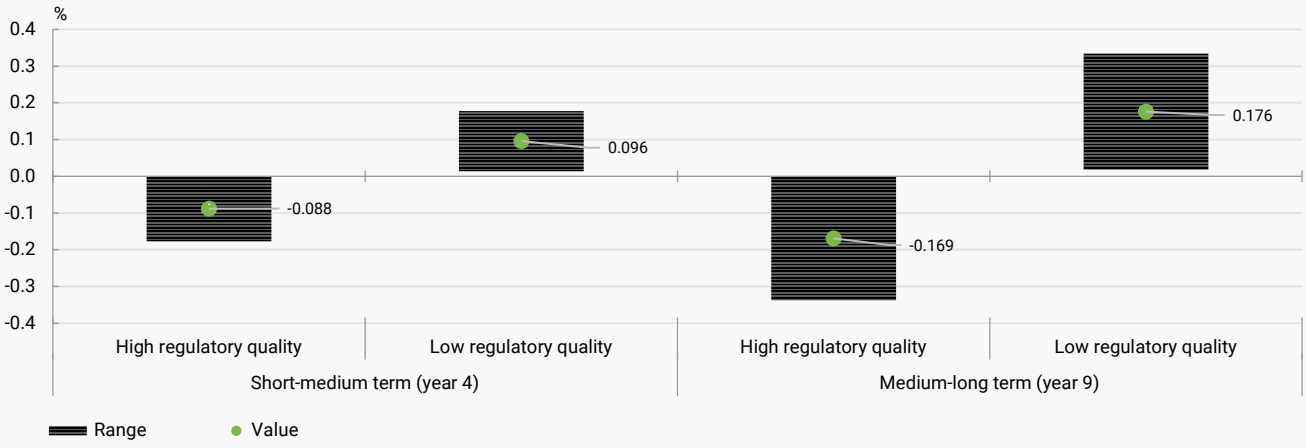
PUBLIC DEBT EXPANSION AND BANK CAPITALISATION IN LATIN AMERICA: THE ROLE OF INSTITUTIONAL QUALITY (cont'd)

The results show that institutional quality is key to interpreting the banking system's response to bouts of growth in public debt. In economies with sounder regulatory frameworks, fiscal deterioration tends to be reflected relatively quickly in lower bank capital ratios, a behaviour consistent with earlier loss recognition and more demanding prudential supervision. Conversely, in countries with lower regulatory quality, the adjustment is more gradual and capital ratios may even increase temporarily. Far from being interpreted as an unequivocal sign of greater financial strength, this pattern is consistent with slower adjustment processes, a contraction of bank balances sheets and recapitalisations following an increase in sovereign risk. This delay in adjusting balance sheets in low quality regulatory settings prevents them from being corrected in an orderly fashion and allows weaknesses to build up, exposing the financial system to a potentially severer and more disorderly erosion of capital in the medium term. Consequently, changes in bank capitalisation following a deterioration in public finances should be interpreted considering the institutional environment in which the financial system operates.

This divergence in regulations is shown in particular when the quantitative results for emerging market economies are analysed over key time frames. Over the short to medium term (year 4), following a one percentage point (pp) expansionary shock in public debt, the capital ratios of banks operating in high quality regulatory environments fall immediately by -0.088 pp, as banks write down their sovereign assets in a transparent and timely manner. By contrast, in low quality regulatory regimes, their capital ratio increases by 0.096 pp. Looking at the longer term (year 9), the gap between the two regimes virtually doubles. Whereas in systems with sound supervision capital contracts further to -0.169 pp, in weak institutional environments the ratio rises artificially to peak at +0.176 pp (Chart 1). This accumulated accounting gap of almost 0.35 pp between the two regimes does not mean that weak institutional environments are genuinely strong, but that the recognition of unrealised losses is delayed and that the allocation of assets on balance sheets is distorted. According to these results, changes in the banking sector's actual solvency following a deterioration in the fiscal position may be misinterpreted if the institutional framework is not taken into account.

From a financial stability standpoint, this evidence indicates that institutional quality may affect both the time when strains appear on bank balance sheets and

Chart 1
Regulatory quality determines the speed and direction of the capital adjustment (a)



SOURCE: Giraldo, Giraldo, Gómez-González and Uribe (2026).

a Chart based on local projections estimations (Panel C: emerging market economies). It shows the estimated impact on banks' capital ratio of a +1 pp shock to the debt-to-GDP ratio. In high regulatory quality environments losses are recognised immediately and reduce capital. In low quality regulatory environments, the delay in recognising losses or their concealment temporarily inflates capital.

Box 3
PUBLIC DEBT EXPANSION AND BANK CAPITALISATION IN LATIN AMERICA: THE ROLE OF INSTITUTIONAL QUALITY (cont'd)

their scale.[15] Monitoring the sovereign-bank nexus should therefore combine several indicators and pay due attention to heterogeneity across countries and institutions. More specifically, in order to interpret bank solvency indicators during bouts of fiscal stress, the characteristics of institutions and, particularly, the regulatory capacity of each economy need to be considered so as to properly assess developments in the solvency of its banks.[16]

In Latin America, where some banking systems are highly exposed to sovereign risk and average regulatory quality is lower than in advanced economies,[17] fiscal stress may gradually feed through to bank balance sheets but not be reflected immediately in capital ratios. Macroprudential oversight should therefore complement those indicators of bank solvency with information on government debt holdings, their accounting valuation, provisions, changes in credit and in balance sheet size.

15 It should be noted that the equity-to-assets ratio considered in this box should be analysed together with banks' sovereign debt holdings, the accounting treatment of these holdings, changes in equity and assets, profitability, provisions and regulatory capital measures. This overall picture would determine whether the ratio increases due to stronger capital, a recapitalisation or, conversely, a balance sheet contraction. In other words, isolated developments in this indicator do not, by themselves, provide a conclusive diagnosis of banks' solvency and resilience.

16 In this regard, it should be emphasised that the differences associated with the regulatory quality dimension should be understood as evidence of institutional heterogeneity, and not as causal identification of the effect of regulation or of banking supervision. This dimension summarises general aspects of governments' ability to formulate and implement policies, but does not directly measure the intensity or effectiveness of prudential supervision. Therefore, the mechanisms relating to loss recognition, balance sheet transparency and recapitalisation should be presented as interpretations which are consistent with the findings and not as channels which are identified empirically.

17 According to the regulatory quality dimension of the worldwide governance indicators, on a scale of −2.5 (lowest quality) to +2.5 (highest quality), the average for advanced economies is around 1.2 but for Latin American countries it is approximately −0.1, with low cross-country dispersion.