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## Government guarantees and the bank-sovereign nexus

By  Agnese Leonello<sup>[1]</sup>

*The recent financial and sovereign debt crises showed that providing public guarantees to banks may pose serious threats to sovereign solvency, despite their short-term beneficial effects on financial stability. This article analyses the role that public guarantees to banks play in the bank-sovereign nexus and offers a more nuanced assessment of their implications for sovereign debt crises. Depending on the nature of the banking crisis and the specific characteristics of the economy, guarantees may improve financial stability without undermining sovereign solvency, thus generating a positive feedback loop between bank and sovereign stability.*

### Guarantees, financial stability and sovereign solvency

The recent financial and sovereign debt crises have reopened the debate about the desirability of providing government guarantees to banks.<sup>[2]</sup> Public guarantees can prevent panic from spreading among investors. By ensuring that investors receive a minimum repayment, irrespective of a bank's health and other investors' withdrawal decisions, guarantees reduce investors' incentives for a run on a bank. As a result, assuming there are no distortions to banks' and their creditors' risk-taking behaviour, guarantees have a stabilising effect on the financial sector.<sup>[3]</sup> However, when a banking crisis occurs, guarantees entail an actual, and potentially large, disbursement for the government providing them.

As a consequence of potential disbursements, the mere announcement of a new guarantee or the extension of an existing one may pose a serious threat to the solvency of the government itself, possibly setting in motion an adverse feedback loop between sovereign and bank stability (the bank-sovereign nexus). For instance, if the announced guarantee is perceived by investors as undermining the sovereign's debt sustainability, its credibility and effectiveness in preventing instability in the banking sector are also weakened. This would magnify the anticipated need for and cost of public intervention in the banking sector, which in turn would lead to a further deterioration of the sovereign's fiscal position, and so on.<sup>[4]</sup> The Irish crisis in 2008 offered a striking illustration of this harmful mechanism.

Do public guarantees to banks always play such a destabilising role? This article (based on Leonello (2017)) shows that this is not the case. Depending on the specific characteristics of the economy and the nature of the banking crisis, public guarantees may improve financial stability without undermining sovereign solvency, thus triggering a positive feedback loop between bank and sovereign stability.

### Disentangling the effects of guarantees on the bank-sovereign nexus

When both the banks and the government are exposed to rollover risk in their debt financing, and are fragile as a result, the provision of public guarantees to banks emerges as a key channel linking their creditors' rollover decisions and thus bank and sovereign stability. In this scenario, the actual provision of guarantees, in the event of a banking crisis, depends on the rollover decisions taken by the sovereign's creditors, as they determine the amount of resources available to the government to pay the guarantees after servicing its debt. Therefore, the repayment the bank's creditors expect to receive increases with the proportion of investors who are willing to invest in sovereign bonds. Symmetrically, the repayment the sovereign's creditors expect to receive increases with the proportion of depositors who do not make a run.

This is the case because, all other things being equal, the larger the proportion of a bank's creditors not rolling over (i.e. making a run), the larger the disbursement for the government associated with the provision of guarantees and the tighter the government's budget.

By linking investors' decisions whether to hold bank and government debt, guarantees link the probability of a banking and a sovereign debt crisis, and so emerge as a key channel in the bank-sovereign nexus. This implies that changes in the level of the guarantees affect the probability of each type of crisis, as well as their interaction. Thus, the effect of public guarantees on the bank-sovereign nexus is twofold.

First, guarantees have a *direct* beneficial effect on financial stability and a detrimental effect on sovereign solvency. By reducing the incentives for the banks' creditors to make a run, larger guarantees reduce the banks' need to prematurely liquidate profitable investments at a cost, and so lead, all else being equal, to a reduction in the probability of a banking crisis. At the same time, they entail a larger disbursement for the government in the event of a banking crisis and so reduce the sovereign's ability to service its financing needs in the bond market, which, in turn, leads to an increase in the probability of a sovereign default. Similar to a bank run, a sovereign default can be triggered by investors' perception that the tightening of the government's budget associated with the provision of larger guarantees undermines its ability to repay its debt. This fear can become self-fulfilling if, not being able to raise funds in the bond market, the government actually fails to meet its obligations and defaults.

Second, guarantees have an *indirect* detrimental effect on financial stability and a beneficial effect on sovereign solvency, resulting from the interdependence between the likelihood of a banking crisis and that of a sovereign default. By increasing the probability of a sovereign default, larger guarantees become less credible and effective, thus undermining financial stability. Symmetrically, by reducing the probability of a banking crisis, guarantees reduce the instances in which the government transfers resources to the banking sector, thus improving sovereign stability.

Since direct and indirect effects work in opposite directions, the overall effect of guarantees on the bank-sovereign nexus can be either beneficial or detrimental. The former occurs when an increase in the size of the guarantee leads to such a significant reduction in the probability of a banking crisis that, despite the increased disbursement for the government, the probability of a sovereign default also drops. The latter emerges when the direct effect of guarantees on financial stability is limited and thus cannot offset the negative impact on sovereign solvency. In all other instances, when the direct effect of guarantees on the likelihood of a banking crisis is neither very large nor very small, larger guarantees improve financial stability, but at the cost of an increase in the probability of a sovereign default (Figure 1).

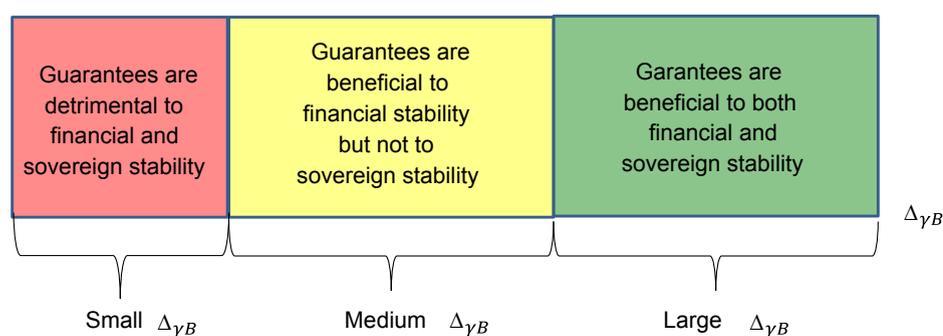


Figure 1: Effect of guarantees on the bank-sovereign nexus. The figure shows that the overall effect of a change in the level of guarantees on the bank-sovereign nexus depends on the magnitude of the direct effect of the guarantees on the likelihood of a banking crisis ( $\Delta\gamma_B$ ).

## What determines the overall effect on the bank-sovereign nexus?

The size of the banking sector, the state of public finances and the nature of crises play an important role in determining the effect of guarantees on the bank-sovereign nexus. The size of the banking sector relative to that of the public sector matters, as evidenced in the Irish crisis in 2008. A larger banking sector, all else being equal, makes the guarantees more costly and the government more constrained. As a result, it is more likely that larger guarantees trigger a negative feedback loop between banking and sovereign debt crises.

The health of public finances plays an important role in the effect of guarantees on the bank-sovereign nexus. The sounder the government's budget and debt position, the more limited the detrimental (direct) effect of guarantees on sovereign solvency and so on the bank-sovereign nexus. The reason is that, if the government has a sounder budget and debt position and more resources to finance the scheme, besides those raised by issuing bonds, the interdependence between banking and sovereign debt crises is lower and so is the likelihood of each type of crisis. This suggests that consolidation measures, aimed at improving the state of public finances, can be a useful tool to limit the potentially destabilising effect of guarantees on bank and sovereign stability. There is an important caveat in this argument: the way consolidation is achieved also matters. Depending on its design, fiscal consolidation may have recessionary effects, which may, in turn, influence the stability of the banking sector. When this is the case, policies aimed at improving the state of public finances may have counterproductive effects on the bank-sovereign nexus through their negative impact on the macroeconomy and, hence, on financial stability.

The nature of a banking crisis is an important element to consider in assessing the desirability of public intervention. Guarantees are an effective and basically costless tool (ignoring potential costs caused by the moral hazard in bank behaviour resulting from the guarantees) to prevent purely panic-driven banking crises, i.e. crises driven by a bank's perceived illiquidity.<sup>[5]</sup> However, when bank failures result from a deterioration in the economic fundamentals determining the value of their assets, guarantees may not be fully effective in preventing crises, as they may entail an actual disbursement for the government. As a result, the effect of guarantees on the bank-sovereign nexus tends to be positive when a banking crisis is mainly panic-driven and negative when it is due to a deterioration of fundamentals.<sup>[6]</sup>

## Final remarks

The arguments presented here confirm the role played by guarantees in linking bank and sovereign stability, as seen, for example, in the Irish crisis in 2008. However, they also show that guarantees may have a stabilising role on the bank-sovereign nexus, improving financial stability without undermining sovereign solvency, depending on the specific characteristics of the economy and the nature of the crisis. These results, therefore, support the existence of cross-country differences in the effects of public intervention on the bank-sovereign nexus, as evidenced in the recent debt crisis. The underlying analysis in Leonello (2017) provides additional insights into guarantees and their non-trivial interactions with bank holdings of sovereign bonds and advocates coordination between different policies to effectively address the bank-sovereign nexus. The analysis presented here does not take into account the potential distortions in bank behaviour associated with guarantees. The presence of such distortions may reveal a darker side of guarantees and limit their potential beneficial effects on the bank-sovereign nexus.

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here are those of the author and do not necessarily represent the views of the European Central Bank and the Eurosystem.

[2] Throughout the article, I adopt a broad definition of government guarantees, encompassing both a standard deposit insurance scheme and the promise of a bailout provided in the event of a bank's failure.

[3] Distortions in banks' and their creditors' risk-taking behaviour associated with the provision of the guarantees have been seen as a major drawback of guarantees (see, e.g., Allen, Carletti, Goldstein and Leonello (2015) for a literature review). The idea is that, since the risk is shifted to the government, banks and their creditors have incentives to take risk, thus potentially increasing financial instability in the future. This article abstracts from this issue and focuses on the short-term implications of guarantees for both financial and sovereign stability.

[4] See, for example, Cooper and Nikolov (2013), Acharya, Drechsler and Schnabl (2014) and Farhi and Tirole (2016).

[5] This is the case because guarantees have a pure announcement effect and their presence is enough to prevent banks' creditors from running. As crises do not then occur, the guarantees do not entail any disbursement for the government. See Diamond and Dybvig (1983).

[6] A caveat in this argument is that it is very difficult to distinguish between liquidity-driven and solvency-driven crises.

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**European Central Bank**

Directorate General Communications

Sonnemannstrasse 20, 60314 Frankfurt am Main, Germany

Tel.: +49 69 1344 7455, Email: [media@ecb.europa.eu](mailto:media@ecb.europa.eu)

Website: [www.ecb.europa.eu](http://www.ecb.europa.eu)

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