

The insurance role of official loan guarantees: the Portuguese case

Filipe Grilo, José Jorge & Sujiao Zhao

Universidade do Porto - Faculdade de Economia da Universidade do Porto

Executive summary

Official loan guarantees are widely used to support small and medium-sized enterprises (SMEs), but they are often evaluated through a narrow lens: by how much they relax collateral constraints, expand credit, and raise investment and output. In Portugal, as in many other countries, the evidence on investment and short run output effects is mixed, making the program's impact harder to communicate and potentially weakening public support. This brief reframes the discussion by highlighting a central but often overlooked point: *loan guarantees also function as insurance*. Many high-value activities (particularly those with high upfront fixed costs, such as exporting or innovation) are highly exposed to future liquidity shocks, including cost overruns or delayed payments. Because firms cannot pledge future cash flows as collateral, private markets tend to underprovide insurance against these risks. Official loan guarantees can fill this gap by offering protection/insurance against future liquidity shortfalls. They therefore operate through two complementary channels:

- The collateral channel, which relaxes borrowing constraints when the credit is granted; and
- a liquidity-insurance channel, which provides contingent support if adverse shocks occur later.

New evidence for Portugal shows that each additional euro in a guarantee backing 75% of a four-year loan leads to: (i) an immediate but temporary increase in bank credit that is smaller than €1, consistent with banks partly replacing non-guaranteed loans with guaranteed loans; (ii) no clear short-run effect on firm output; and (iii) composition effects, with guarantees supporting activities such as exports. The demand for guarantees does not depend on activation rates, suggesting no clear adverse selection. Activation rates are higher ex post for firms with larger guarantees (about 5% versus 8%), and this pattern is consistent with increased risk-taking and/or weaker monitoring once insurance is in place.

Taken together, these findings suggest that loan guarantees should be designed, evaluated, and communicated as insurance instruments that support resilience and productive risk-taking, rather than judged solely by short-term investment or output growth. This calls for stronger monitoring, appropriate risk sharing with banks, and risk-based pricing to ensure both effectiveness and long-run sustainability.

Recommendations

- Design guarantees as insurance. Guarantee schemes should rely on risk-based pricing, target high-fixed-cost and high-value activities, preserve banks' "skin in the game", monitor risk shifting into guaranteed loans, and apply simple follow-up procedures.
- Evaluate and communicate guarantees as insurance. Program performance should be assessed using firm resilience and survival outcomes, with attention to compositional effects such as internationalization and innovation, and the insurance logic should be communicated clearly.

Target audience of the policy brief

Sociedade de Garantia Mútua, Banco Português de Fomento, Banco de Portugal, Ministry of the Economy, AICEP (Agência para o Investimento e Comércio Externo de Portugal), and the CCDRs (Comissões de Coordenação e Desenvolvimento Regional).

Introduction and Problem Statement

Loan guarantee schemes are a central policy tool in credit markets worldwide. They are particularly prominent in Asia, which hosts the largest programs globally (Beck, Klapper, and Mendoza, 2010), but their scale is also substantial elsewhere. In the United States, federal loan guarantees issued in 2019 alone backed loans amounting to roughly 7% of GDP (Bachas, Kim, and Yannelis, 2021). In Europe, the outstanding stock of firm loan guarantees reached 2.1% of GDP in Italy in 2014, 1.8% in Portugal in 2015, and 0.8% in France in 2015 (Kraemer-Eis et al., 2016). These figures underscore the economic significance of loan guarantees and the importance of evaluating their practical application.

The standard policy rationale for official loan guarantee schemes is rooted in the conventional theory of credit rationing. According to this view, small and medium-sized firms face limited access to bank credit due to informational asymmetries. Loan guarantees are intended to relax collateral constraints, improve access to external finance, and stimulate investment (Honohan, 2010). Despite their widespread use, however, empirical evidence on the financial and real effects of loan guarantees has been mixed. In many cases, it has proven difficult to identify clear impacts on investment, output, or productivity, raising questions about the effectiveness of these schemes.

This policy brief argues that the conventional collateral-based view is incomplete. While collateral shortages are undoubtedly important, they do not fully capture the economic role of loan guarantees. Investment projects unfold over time and are exposed to future adverse shocks, such as cost overruns, demand

shortfalls, delayed revenues, or other disruptions in cash flow. These risks are particularly salient for firms engaged in exporting, innovation, or other activities involving large sunk costs and uncertain returns.¹ In such contexts, firms face not only a shortage of collateral but also a shortage of insurance against future liquidity shocks.

The central message of this brief is that loan guarantees provide liquidity insurance. Firms suffer from both a shortage of collateral and a shortage of insurance as a result of market failure. Loan guarantees mitigate these shortages by operating through two distinct but complementary mechanisms:

- The collateral channel, which relaxes borrowing constraints at the time credit is granted; and
- the liquidity-insurance channel, which protects firms against future liquidity shortfalls. Loan guarantees offer insurance by supplying contingent liquidity when firms need it most.

This policy brief explains the economic logic underlying the liquidity-insurance channel and summarizes the empirical evidence supporting it, with a particular focus on Portugal. Drawing on recent research, we document how Portuguese loan guarantees affect firm behavior beyond standard credit expansion. We then discuss the policy implications of viewing loan guarantees as liquidity insurance, including insights from the literature on adverse selection and moral hazard. Our objective is to support more informed design, evaluation, and communication of loan guarantee schemes by Portuguese institutions such as *Sociedade de Garantia Mútua* or *Banco Português de Fomento*.

Analysis / Key Findings

What is a loan guarantee?

A loan guarantee is an insurance contract that protects the firm if it cannot repay a loan. In exchange, the firm pays a fee (the insurance premium) in advance. If the firm experiences a

severe negative shock, such as an unexpected cost overrun, and is unable to meet its repayment obligations, the guarantee is activated and the guarantor covers the insured share of the outstanding loan.

¹ A sunk cost is akin to a fixed cost made at the start of the project, and which cannot be recovered.

In practical terms, this means that a loan guarantee does more than “add collateral” at the time the loan is granted: it also provides contingent support in bad states of the world, when the firm’s liquidity is under stress.

How does a loan guarantee operate?

Loan guarantees affect firms through two complementary channels.

1. The collateral channel (access to credit today): Small firms often have limited access to credit because banks cannot fully observe firm quality or effort. To protect themselves, banks require collateral, i.e. assets or cash flows that can be credibly pledged to repay the loan. When collateral is scarce, banks may restrict lending even to firms with profitable projects. Banks bridge this gap through screening (selecting better borrowers) and monitoring (reducing risky behavior after the loan is granted) (Holmström and Tirole, 1997), but these mechanisms are imperfect and costly. A loan guarantee relaxes this constraint by providing an additional repayment backstop, making the loan safer for the bank and allowing some firms to borrow when they otherwise could not (or to borrow on better terms).

2. The liquidity-insurance channel (support in the future if needed): Many projects imply upfront sunk costs and only generate returns over time. Along the way, firms may face adverse shocks and need additional funds. When a firm cannot fully pledge its future income to outside investors (i.e. there is insufficient collateral), private markets may provide too little insurance against these shocks. In that case, firms may avoid activities that are socially valuable but risky, such as exporting or R&D, because they cannot secure reliable funding in the aftermath of a negative shock (Holmström and Tirole, 1998). Loan guarantees help fill this gap by providing contingent liquidity: support is delivered precisely when the firm is under financial stress, which can make it feasible for firms to undertake projects with large sunk costs and uncertain cash flows.

Why do insurance markets fail? Adverse selection and moral hazard

The most common reasons why insurance markets fail are adverse selection and moral hazard.

- Adverse selection refers to a selection problem before the guarantee is granted. It is an ex ante problem, whereby insurance attracts bad risks. This concern may be framed as “do guarantees disproportionately attract firms that are more likely to default?”

- Moral hazard refers to a behavior problem that arises after a guarantee is granted. It is an ex post problem, whereby insurance induces bad behavior. A firm that is partially protected against losses may take actions that increase risk (for example, choosing riskier projects, reducing effort, or weakening repayment discipline). In loan guarantees, moral hazard can arise at the firm level (resulting in riskier decisions) or at the bank level (leading to less intensive monitoring when part of the downside is shifted to the loan guarantee agency).

Together, adverse selection and moral hazard can reduce the private supply of insurance and help explain why firms may be unable to obtain sufficient protection against liquidity shocks without policy intervention.

How to evaluate a loan guarantee scheme?

Evaluations typically distinguish between financial additionality and economic additionality (Cusmano, 2013).

- Financial additionality asks whether the scheme changes firms’ financing outcomes. In practice, this includes two questions: (i) Would the loan have been granted without the guarantee? (ii) Did the guarantee improve the terms of credit?

- Economic additionality asks whether improved financing translates into real economic benefits. At the firm level, this is assessed through outcomes such as output, sales, employment, investment, productivity, exports, or innovation. At the economy-wide level, the focus shifts to broader objectives such as competitiveness, job creation, resilience, and long-run growth.

A key implication of this brief is that, if guarantees operate partly through liquidity insurance, evaluation should look beyond “more credit and more investment” and also consider whether guarantees help firms withstand shocks and undertake riskier but high-value activities (such as exporting or R&D).

How can we measure financial and economic additionality?

Assessing additionality requires credible causal evidence on what would have happened to supported firms in the absence of the guarantee (Cusmano, 2013). This is often done by comparing firms that receive guaranteed loans (the “treated” firms) with similar firms that do not (the “control” firms). For policymakers, this highlights the importance of robust evaluation designs to ensure that differences in outcomes can be attributed to the guarantee scheme itself.

What does international evidence say about loan guarantees?

The empirical literature reaches two broad conclusions: (i) guarantees often expand credit, but banks may respond strategically; and (ii) evidence on real economic effects is mixed and harder to establish.

- Financial additionality (usually positive, with important caveats): Most studies find that loan guarantees increase access to credit and/or improve borrowing terms. However, several papers also show that banks can reallocate lending in response to guarantees, which complicates interpretation. For example, in Japan’s 2008–2009 crisis programs, credit availability rose for participating firms, but part of the increase came from a substitution away from non-guaranteed lending, especially when guarantees were offered to firms with existing bank relationships (Ono, Uesugi, and Yasuda, 2013). Moreover, the ex post performance of firms receiving guaranteed loans from relationship banks deteriorated relative to comparable firms without guaranteed loans, raising concerns about strategic use of guarantees by banks. Similar patterns of strategic allocation have been documented for Italy during the COVID-19 period (Cascarino et al., 2022; Altavilla, Ellul, and Pagano, 2022).

- Economic additionality (mixed evidence, partly due to measurement challenges): Estimating the real effects of guarantees is more difficult because it requires rich data and credible causal designs. The existing evidence is mixed, and several studies report limited or null effects in some settings. Examples include findings for Japan (Uesugi, 2008; Uesugi, Sakai, and Yamashiro, 2010), Korea (Kang, Heshmati and Choi, 2008), and Italy (Zecchini

and Ventura, 2009; Blasio et al., 2018; D’Ignazio and Menon, 2020).

What does the evidence say for Portugal?

The Portuguese evidence is still limited, but it points to positive financial additionality and more mixed results on real outcomes.

- Rodrigues et al. (2018) provide a comprehensive evaluation of the Portuguese credit guarantee scheme and report positive evidence of both financial and economic additionality. At the same time, they do not find statistically significant effects on firm investment, suggesting that the main benefits of guarantees may not always appear through higher capital expenditure (Rodrigues et al., 2018, p. 61).

- Bonfim, Custódio, and Raposo (2023) study the PME Líder program, which combines (i) a certification component and (ii) access to subsidized loan guarantees. Their findings on additionality are mixed. A key interpretation challenge is that certification and access to guarantees are bundled together, making it difficult to separate the certification effect, as in Holmström and Tirole (1997), from the guarantee’s role as collateral and liquidity insurance.

The next section summarizes evidence from Grilo, Jorge, and Zhao (2025), which directly speaks to the mechanisms emphasized in this brief, especially the liquidity-insurance channel.

Additional results for Portugal: Grilo, Jorge, and Zhao (2025)

Grilo, Jorge, and Zhao (2025) study the Portuguese credit guarantee scheme using the *PME Crescimento* program in 2012–2013. This program is useful for evaluation because it applies similar rules to firms, but differs in one key dimension: the maximum guarantee amount.

Under *PME Crescimento*, eligible firms receive a guarantee covering 75% of a bank loan but the maximum amount differs:

- Micro firms (fewer than 10 employees) receive guarantees up to €18,750.
- Small firms (10 or more employees) receive guarantees up to €37,500.

This discontinuity at 10 employees creates a natural comparison: firms just below and just above the threshold are very similar, yet they face different maximum guarantee limits.² Small firms end up receiving guarantees €17,855 larger than micro firms, on average.

Figures 1, 2 and 3 below compare treated firms (small firms, with access to higher guarantees) to control firms (micro firms, with access to lower guarantees) before and after the guarantee is issued. Each chart plots the difference between treated and control firms over time, where the year before the guarantee is normalized to zero; the vertical dashed line marks the year of guarantee issuance.

Figure 1 assesses the evolution of financial additionality with bank loans. We can only observe the value of bank loans one year prior to the guarantee being obtained due to lack of data.

- Loans from the bank providing the guaranteed loan (Figure 1, Panel a): there is an immediate increase in lending after the guarantee is issued, but the difference fades and may turn negative later. The initial increase (about €10,000) is smaller than the mechanical difference in maximum guarantee capacity (equal to €25,000, backed by a €18,750 guarantee), which is consistent with the possibility that banks adjust other lending by substituting away from non-guaranteed credit.
- For completeness, Figure 1, Panel b reports the difference in loans from other banks that did not grant guaranteed loans.

Figure 2 assesses the evolution of economic additionality with firm output.

- Output for all firms (Figure 2, Panel a): we do not find clear evidence that firms expand the overall scale of operations after receiving a larger guarantee.
- Output by activation status (Figure 2, Panels b–c): separating firms that later activate the guarantee from those that do not leads to a similar conclusion: point estimates suggest some differences, but they are not statistically significant.

Overall, these results suggest that the strongest short-run effects of guarantees may not appear as larger scale or higher total output, which is consistent with the idea developed in this brief: guarantees may matter more through liquidity insurance and resilience than through a pure “more credit leads to larger scale” channel (implied by the collateral channel).

Composition effects: Internationalization of Portuguese firms

The liquidity insurance approach implies “qualitative” effects on firm behavior, which we examine through export activity. This activity is well aligned with the liquidity-insurance channel emphasized in this brief: exporting typically requires upfront sunk costs (e.g., market entry, product adaptation, distribution, compliance) and exposes firms to cash-flow risk before revenues materialize (Melitz, 2003). If guarantees provide contingent support in bad states of the world, they can make exporting more feasible.

Rigorous evidence on whether Portuguese loan guarantees support firms’ internationalization is still limited. Two recent studies are notable.

- Custódio, Hansman, and Mendes (2024) apply a design similar Bonfim, Custódio, and Raposo (2023) and find a positive effect of guarantees on exports.
- Ribeiro (2025) applies a design similar to Grilo, Jorge, and Zhao (2025), explicitly focusing on internationalization outcomes. Figure 3 (from Ribeiro, 2025) shows that firms with greater access to guarantees experience a relative increase in exports after the guarantee is issued.

Even when guarantees do not generate a clear increase in total output in the short run, they may still have economically meaningful effects by changing what firms do: loan guarantees can enable firms to shift toward riskier, high-value activities, with large sunk costs. This pattern is consistent with the view of guarantees as liquidity insurance: the guarantee matters less as “more credit for expansion” and more as “insurance that makes difficult projects viable.”

² In practice, the comparison can be interpreted as firms with 8–9 employees versus 10–11 employees. Results are robust in a wider band such as 5–14 employees.

Insurance, adverse selection, and moral hazard in Portuguese loan guarantees

Grilo, Jorge, and Zhao (2025) develop a framework that incorporates both mechanisms discussed in this brief (the collateral channel and the liquidity-insurance channel) and then test the model's predictions using Portuguese data. We find positive evidence consistent with the liquidity-insurance channel. This raises an important follow-up question for policy: If guarantees embed insurance, do they also create selection or incentive problems? To the best of our knowledge, Cowan, Drexler, and Yañez (2015) is the only paper that performs this type of study (albeit in a different setting).

Empirically, we find no evidence of adverse selection. The demand for guarantees is similar for firms that activate their guarantees and for firms that do not activate, suggesting that guarantees do not, by themselves, lead to a disproportionate inflow of “bad risks.”³ We do find evidence consistent with moral hazard (or, more broadly, changes in risk-taking

incentives). Ex post, activation is about 5% among control firms and about 8% among treated firms. This gap suggests that larger guarantees are associated with higher realized risk.

This pattern, however, does not necessarily imply inefficient or “bad” behaviour. It may reflect:

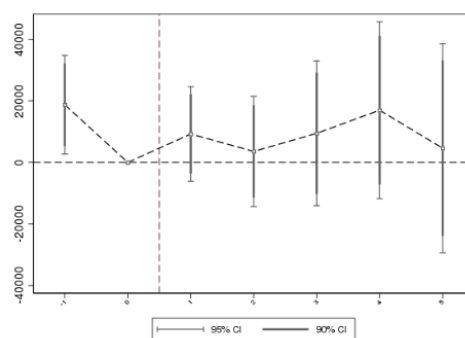
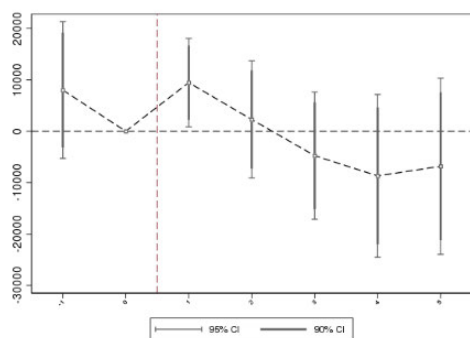
- Efficient risk-taking (e.g., more exporting or innovation, where some failures are expected),
- Reduced effort or weaker repayment discipline at the firm level, and/or weaker monitoring at the bank level when a larger share of losses is covered.

For policy design, the key point is that an insurance-based view of guarantees may imply some increase in activations. The relevant question is therefore not whether activations rise, but whether the additional risk-taking is productive and aligned with policy objectives, and whether program design and monitoring arrangements keep incentives well balanced.

Figure 1 - Bank Loans: This figure plots the point estimates and the 90% and 95% confidence intervals for the average difference between the treated and the control groups for bank loans for two samples. The horizontal axis displays time in years around the origination date of the guarantee (represented by the vertical dashed line) with year 0 representing the year prior to origination. The units on the vertical axis measure differences in euros between the treated and the control groups. The treated group consists of firms with access to guarantees of €37,500, while the control group consists of firms with access to guarantees of €18,750. Both panels report estimates for firms with between 8 and 11 employees. The sample period is 2010 to 2017 and the sources are *Banco Português de Fomento* and *Banco de Portugal*.

Panel a: Bank loans granted by the bank that grants the loan guarantee

Panel b: Bank loans granted by the banks that do not grant the loan guarantee

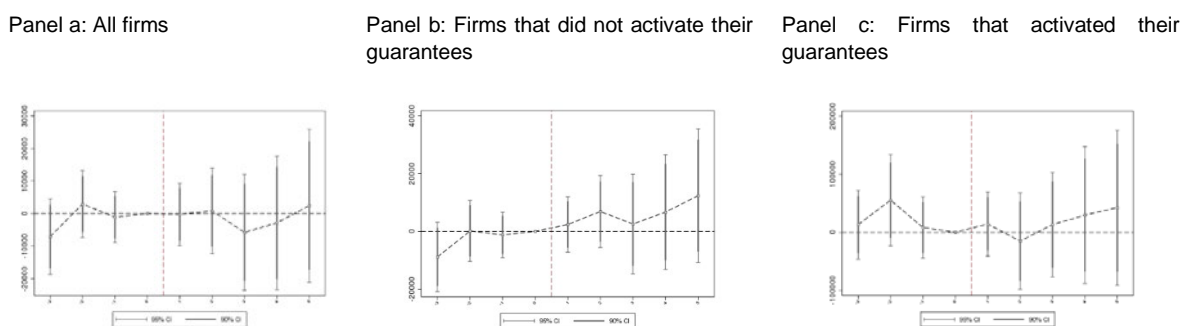


Source: Grilo, Jorge, and Zhao (2025)

³ We cannot directly test strategic selection by banks because our dataset does not include bank-level identifiers. In principle, banks could steer riskier borrowers into

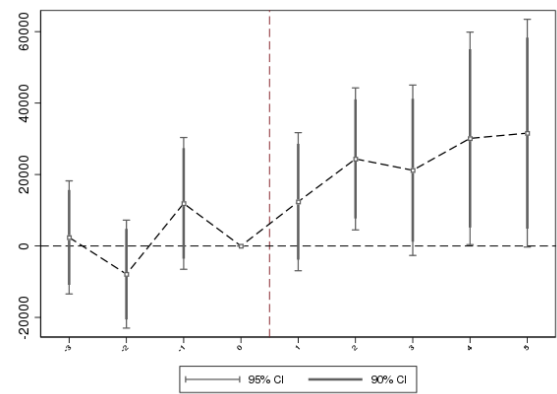
guaranteed credit, although the available evidence does not point strongly in that direction.

Figure 2 - Firm Output: This figure plots the point estimates and the 90% and 95% confidence intervals for the average difference between the treated and the control groups for firm output for several samples. The horizontal axis displays time in years around the origination date of the guarantee (represented by the vertical dashed line) with year 0 representing the year prior to origination. The units on the vertical axis measure differences in euros between the treated and the control groups. The treated group consists of firms with access to guarantees of €37,500, while the control group consists of firms with access to guarantees of €18,750. All panels report estimates for firms with between 8 and 11 employees. The sample period is 2008 to 2017 and the sources are *Banco Português de Fomento* and *Banco de Portugal*.



Source: Grilo, Jorge, and Zhao (2025)

Figure 3 - Firm Exports: This figure plots the point estimates and the 90% and 95% confidence intervals for the average difference between the treated and the control groups for firm exports. The horizontal axis displays time in years around the origination date of the guarantee (represented by the vertical dashed line) with year 0 representing the year prior to origination. The units on the vertical axis measure differences in euros between the treated and the control groups. The treated group consists of firms with access to guarantees of €37,500, while the control group consists of firms with access to guarantees of €18,750. The figure reports estimates for firms with between 8 and 11 employees. The sample period is 2008 to 2017 and the sources are *Banco Português de Fomento* and *Banco de Portugal*.



Source: Ribeiro (2025)

Policy Options and Recommendations

This brief highlights two actionable directions for Portuguese guarantee institutions. The first concerns contract design. The second concerns communication and evaluation (how guarantees are explained to stakeholders and how success is measured).

Contract design (strengthen incentives and monitoring)

Loan guarantee agencies typically do not have screening and monitoring abilities and therefore relying on banks is inevitable. Our evidence suggests that bank screening may work better

than bank monitoring: we do not find clear signs of adverse selection (higher guarantees do not appear to attract systematically worse firms), but we do find patterns consistent with higher ex post risk-taking when guarantee limits are larger.

The evidence points to three practical priorities:

- Check for bank-level selection and strategic use. Even in the absence of firm-level selection, banks may allocate guaranteed credit strategically, for example by shifting risk into guaranteed loans. This risk can be monitored by tracking, at the bank level, the share of guaranteed lending in total credit over time. A sharp increase in this share, especially when accompanied by higher guarantee activation rates, may indicate strategic risk shifting rather than genuine financial additionality.
- Strengthen ex post monitoring incentives. If moral hazard partly reflects weaker monitoring, guarantee design can help. Options include (i) requiring minimum monitoring standards (documentation, early-warning triggers), and (ii) using risk-sharing that preserves bank “skin in the game,” especially for higher-risk borrowers.
- Pricing and sustainability. Grilo, Jorge, and Zhao (2025) show that non-subsidized loan guarantee schemes are valuable and effective. Hence, it seems adequate to raise the insurance premia associated with public guarantees, to help the sustainability of official guarantee schemes. Portugal’s move toward higher premia since 2018 is consistent with this logic.

Finally, if “firm resilience” is a policy goal, programs can be better targeted toward firms and activities that are most exposed to liquidity

shocks (e.g., exporters, innovators, young firms with high sunk costs), while ensuring that monitoring and pricing reflect that higher risk.

Communication and evaluation (shift from “more credit” to “more resilience”)

Public guarantee agencies are often evaluated through the narrow lens “more credit leads to more investment and leads to higher output”. When these effects are weak or slow to appear, programs may look ineffective.

This brief suggests a broader and more accurate narrative: guarantees are also liquidity insurance. Under that view, success ought to be assessed not only by expansion in scale, but also by whether guarantees help firms withstand shocks and undertake high-value but risky projects.

Two practical implications follow:

- Report resilience metrics alongside credit metrics. In addition to loan volumes and interest rates, evaluation can track indicators such as liquidity buffers, survival during downturns, employment stability, and the ability to continue projects after adverse shocks.
- Emphasize composition effects, not only scale effects. Even if total output does not rise quickly, guarantees may still deliver value by enabling firms to shift into activities with long-run payoffs (such as exporting, or innovation) where sunk costs are high and interim liquidity risk is central.

In short, the recommendation is not to abandon the collateral narrative, but to complement it with an insurance/resilience narrative that better matches how guarantees operate in practice and what they can realistically deliver.

Conclusion

The Portuguese guarantee scheme is often justified through the collateral channel: guarantees help firms borrow by reducing banks’ risk at the time credit is granted. Yet the empirical evidence does not consistently show large effects on investment or short-run output. This gap can leave guarantee schemes exposed to criticism, especially when they are assessed only through “more credit leads to more investment” metrics.

Grilo, Jorge, and Zhao (2025) argue that this conventional view is incomplete. Many business projects unfold over time and are exposed to liquidity shocks. When private financial markets cannot provide adequate protection against these shocks, firms may avoid activities with high sunk costs and uncertain cash flows, such as exporting or innovation. Under this perspective, loan guarantees do not only support borrowing

upfront; they also provide liquidity insurance, by delivering contingent support precisely in adverse states of the world. This helps firms undertake projects that are economically valuable but difficult to insure privately.

A predictable implication of any insurance-based policy is that it involves ex post transfers to firms that experience adverse shocks. This is sometimes framed negatively in public debate, as if default or guarantee activation were a sign of irresponsibility. But in an economy that wants firms to invest, innovate, and enter foreign markets, some failures are inevitable. The relevant question is not whether guarantee activation occurs, but whether the risk-taking that guarantees enable is productive and aligned with policy goals.

An analogy may help. Car insurance is not judged by whether claims are zero—claims are expected. Instead, it is judged by whether pricing, incentives, and monitoring keep the system sustainable while providing protection when accidents occur. Seen through this lens, loan guarantees are less about “protecting banks from dishonest firms” and more about helping viable firms survive bad luck in risky, high-value activities, while keeping incentives balanced. By embracing this insurance framework, institutions such as *Sociedade de Garantia Mútua* and *Banco Português de Fomento* can design more sustainable programs, communicate their value more clearly, and better support the resilient and innovative SMEs that drive long-term economic growth.

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science4policy@planapp.gov.pt

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