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# Public Credit Guarantees and Access to Finance

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# Public Credit Guarantees and Access to Finance

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## Abstract

Public credit guarantee schemes have gained popularity as a tool to try to increase access to credit for firms perceived to be financially constrained, typically small and medium-sized enterprises. This paper discusses the potential relevance of these schemes by providing a brief overview of their use around the world and reviewing some important design features. The paper also presents a brief conceptual discussion of the role of public credit guarantees in increasing access to credit and the rationale for government intervention. Public credit guarantee schemes can constitute useful mechanisms for increasing access to finance for certain groups of borrowers, but their success and financial sustainability hinge on proper design. Moreover, rigorous evidence on the impact of these schemes is still scarce. More in-depth evaluations that jointly take into account financial sustainability and (financial and economic) additionality are needed, as well as an assessment of credit guarantees against alternative policy instruments.

**JEL Classification Codes:** E44, G28, H11, O16

**Keywords:** credit guarantees, public guarantees, SME financing, access to finance, public risk absorption

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# 1. Introduction

Over the last decades, public credit guarantee schemes have become a popular tool to try to increase access to credit for firms perceived to be underserved by private financial intermediaries, such as small and medium-sized enterprises (SMEs). However, many questions remain about how these programs actually work and their impact.

This paper discusses the potential relevance of public credit guarantee schemes by providing a brief overview of their use around the world and reviewing some important design features of these schemes. We also present a brief conceptual discussion of the role of public credit guarantees in increasing access to credit to firms and the rationale for government intervention.<sup>1</sup>

Credit guarantee schemes are mechanisms in which a third party—the guarantor—pledges to repay some or the entire loan amount to the lender in case of borrower default. The guarantor assumes part or all of the credit risk, reducing the risk faced by financial intermediaries and thus making it possible for firms to obtain credit or improve the terms and conditions under which they can borrow.

Credit guarantee schemes are widespread, with more than 2,250 credit guarantee schemes of different types operating in over 70 countries by the early 2000s (Pombo and Herrero, 2003). Since the 1950s, governments have established public credit guarantee schemes, usually targeted at some sector, region, or type of firm (such as SMEs, young firms, exporters, and innovators) considered to be underserved by private financial intermediaries and/or whose growth is thought to have positive externalities. Public credit guarantee schemes have become increasingly popular among governments during the past few decades and are now widespread in both developed and developing countries. Moreover, all multilateral development banks operate some form of credit guarantee scheme.

Public credit guarantee schemes have significantly expanded in the aftermath of the 2008-2009 global financial crisis, as several countries (including Canada, Chile, Finland, Germany, the Netherlands, and South Korea) relied heavily on these schemes to compensate for the reduction in private bank lending.<sup>2</sup> In many countries, existing guarantee programs were ramped up, with

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<sup>1</sup> This paper focuses on credit guarantee schemes that provide guarantees directly to financial institutions to cover outstanding loans. Another form of credit guarantee scheme is counter-guarantees, which provide indirect protection to the lender through a guarantee of the main guarantor, e.g. if the main guarantor is a mutual guarantee association. Counter-guarantee schemes are much less common than direct credit guarantee schemes. Also, we do not discuss guarantee schemes focused on guaranteeing export credits against purchaser default, as they raise additional conceptual issues. See, for instance, Stephens (1999) and Auboin and Meier-Ewert (2004) for discussions of some of these issues.

<sup>2</sup> See OECD (2010, 2012, 2013) and World Bank (2013) for discussions on the use of public credit guarantee schemes as countercyclical tools during the financial crisis.

increases in the total amount of funds available, the number of eligible enterprises, the percentage of the loan guaranteed, and/or the size of the guaranteed loans. In other countries, new programs were introduced. The countercyclical use of public credit guarantee schemes during the global financial crisis has led, in many instances, to a significant increase in their scale and scope. This has usually implied a greater commitment on public finances and has increased their risk exposure, which could threaten the financial sustainability of some schemes over the medium to long term.<sup>3</sup>

Despite the significant expansion of public credit guarantee schemes over the last decades and the increasing interest of policymakers in these schemes, there is little theoretical analysis and empirical evidence to systematically inform their design, implementation, and assessment. Although these programs are usually justified based on some social objectives, the rationale underlying the choice of credit guarantees instead of other forms of government intervention is usually left unexplained. Moreover, the precise goals of these schemes are often unclear, making cost-benefit analyses difficult.

Before proceeding, it is important to note that this paper is neither a full-fledged literature survey on public credit guarantee schemes nor a comprehensive assessment of their effectiveness. Rather, it provides a short overview of how public credit guarantees schemes work and a discussion of some design issues that can influence their effectiveness, as well as some critical thoughts on the conceptual arguments that might justify government intervention.

The remainder of the paper is organized as follows. Section 2 provides a conceptual discussion of credit guarantee schemes and how they might help overcome barriers to access to credit. Section 3 presents a general overview of public credit guarantee schemes around the world, reviewing some important design features of these schemes and discussing the existing evidence on their performance and financial sustainability. Section 4 concludes with some thoughts on the role of these schemes in overcoming barriers to access to finance and the rationale for government intervention.

## **2. How Do Credit Guarantees Work?**

Credit guarantee schemes are mechanisms in which a third party—the guarantor—pledges to repay some or the entire loan amount to the lender in case of borrower default. This reduces the lender's expected credit losses, even if the probability of default remains unchanged, acting as a form of insurance against default. The guarantor charges a fee for this service. A credit guarantee can lower the amount of collateral that the borrower needs to pledge to receive a loan, because

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<sup>3</sup> KPMG (2012) finds that public credit guarantee schemes used as countercyclical tools during the crisis reported a considerable increase in bad debts.

the guarantor effectively provides a substitute for collateral. Similarly, for a given amount of collateral, the credit guarantee can allow riskier borrowers to receive a loan and/or to obtain better lending conditions (e.g., longer maturities, lower rates, higher loan amounts), because the guarantee lowers the risk faced by lenders.

Credit guarantee schemes can (and do) emerge privately. This typically happens for three reasons (Honohan, 2010). First, guarantors could have some advantage in dealing with principal agent problems. As is well known in the literature, asymmetric information and enforcement problems can lead to the exclusion of creditworthy borrowers from credit markets.<sup>4</sup> In this situation, if guarantors have any informational or enforcement advantage over lenders, they can help overcome principal agent problems and improve access to credit and/or reduce borrowing costs for certain borrowers. For instance, members of small business organizations might form a mutual guarantee association (MGA), in which firms deposit money into a fund that guarantees loans to members from financial institutions, to take advantage of the fact that they have better information about each other than lenders do. MGAs typically evaluate their members carefully and can thus act as a screening device, reducing asymmetric information problems. The fact that other firms are willing to accept joint responsibility for a loan to a given firm provides a positive signal to lenders regarding its credit quality. Moreover, MGAs have a group liability structure, because all borrowers backed by the scheme have a financial stake in the guarantee fund. This means that members face a cost in case of default by other members and therefore have incentives to monitor each other, ameliorating moral hazard problems.

Second, guarantors might have some advantages relative to lenders in spreading and diversifying risks. If lenders face some restrictions that prevent them from diversifying their loan portfolios (e.g., because their portfolios are geographically concentrated or focused on certain types of borrowers), guarantors might be able to spread risks by providing guarantees to several lenders, thus improving risk diversification.

Third, credit guarantees can sometimes be used for regulatory arbitrage. This can occur, for instance, when guarantors face different regulations than lenders and can provide guarantees that allow an otherwise insufficiently secured loan to meet regulatory requirements.

None of these three reasons imply a need for government participation in credit guarantee schemes. However, governments often do get involved in these schemes, usually in two different ways. First, governments might provide funds to private guarantee schemes, such as MGAs. Second, governments can set up a public credit guarantee scheme. Beck, Klapper, and Mendoza

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<sup>4</sup> For example, Jaffee and Russell (1976) and Stiglitz and Weiss (1981) show that asymmetric information can lead to adverse selection, as higher interest rates attract riskier borrowers, which can result in credit rationing. See de la Torre, Gozzi, and Schmukler (2015) for a conceptual discussion of how principal agent problems could lead to problems of access to finance.

(2010) conduct a survey of credit guarantee schemes around the world and find that the majority of credit guarantee schemes in developing countries are public schemes, while the majority of credit guarantee schemes in developed countries are MGAs. MGAs are particularly common in Europe. For example, Italy has about 950 MGAs, Germany 24, Spain 20, and France ten (ADB, 2007). MGAs in most European countries are often coordinated through one or more guarantee federations and tend to receive some financial support from the government.

In this paper, we focus on public credit guarantee schemes not only because these schemes exist in many countries, but also because there is significant debate regarding their role in ameliorating problems of access to finance. Unlike MGAs, public credit guarantee schemes do not typically have better information about borrowers than lenders do, and thus do not directly reduce information asymmetries. Rodriguez-Mesa (2004) points out that credit guarantees can serve as a substitute for collateral, but they do not play any of the roles that collateral plays in reducing moral hazard and adverse selection, because borrowers are not pledging their own assets and thus do not face an additional cost in case of default. Vogel and Adams (1997) argue that public credit guarantee schemes can actually increase information problems by reducing lenders' incentives to carefully screen and monitor borrowers. On the other hand, public guarantee schemes might reduce information asymmetries, at least in the long-run, by acting as a subsidy for lenders to learn about new groups of borrowers. We discuss these issues in more detail in Section 4.

### **3. Public Credit Guarantee Schemes around the World**

Credit guarantee schemes have existed in different forms at least since the 19<sup>th</sup> century. Some of the first credit guarantee schemes were mutual credit guarantee associations that developed out of guild or craft organizations in Europe. The first public credit guarantee scheme was founded in Holland in 1915. Japan established a regional government-run credit guarantee scheme in Tokyo in 1937, with schemes in other regions of Japan starting operations in the 1940s. A handful of other countries established public credit guarantee schemes in the 1950s. However, the majority of government-run credit guarantee schemes were established in the 1990s and 2000s (Pombo and Herrero, 2003).

The size of public credit guarantee schemes in terms of the volume of loans guaranteed varies widely across countries. Some of the largest public credit guarantee schemes are in Asia. The Japanese credit guarantee system is regarded as the largest in the world in terms of the volume of guarantees, with about 730,000 new loans guaranteed in 2013 and a stock outstanding of 3.1 million guarantees, totaling about 305 billion U.S. dollars. The second largest scheme is in South Korea, with a stock of more than 400,000 outstanding guarantees in 2013, totaling about

40 billion U.S. dollars (almost four percent of South Korean GDP).<sup>5</sup> In contrast, Beck, Klapper, and Mendoza (2010) find that most public credit guarantee schemes in their survey have a stock of less than 100,000 outstanding guarantees, with two thirds of these schemes granting less than 1,000 new loan guarantees per year. This small size typically results in high operating expenses, given the existence of some economies of scale.

### **3.1 Design Issues**

Public credit guarantee schemes around the world differ in their design, specifically in their management structure, operating rules, and the characteristics of their guarantees, such as the coverage ratio and pricing. These design choices can be critical for the success and financial sustainability of credit guarantee schemes, because they influence the participation of financial institutions, administrative costs, and loan default rates. In this section, we briefly discuss these issues and review some international experiences.

The first question that arises when designing a publicly funded credit guarantee scheme is whether the scheme should be solely publicly managed or whether all or part of its activities should be outsourced to the private sector. Running a credit guarantee scheme encompasses a number of tasks, including the management of the guarantee fund, assessing the loans to be guaranteed, and working to recover defaulted loans. Beck, Klapper, and Mendoza (2010) find that in most countries the government is heavily involved in the management of the guarantee fund. However, loan assessment and recovery are typically undertaken by the lenders whose loans are being guaranteed. This approach appears to promote the financial sustainability of credit guarantee schemes. Schemes in which the government chooses borrowers and recovers loans typically have higher loan losses than schemes in which the lender performs these tasks, possibly because lenders have greater experience with credit appraisal and recovery than government agencies and might have more incentives to perform these activities.

The international experience suggests that it might be more cost-effective to have lenders assess the creditworthiness of the borrowers that are being guaranteed, as lenders already have a credit appraisal infrastructure in place.<sup>6</sup> Moreover, loan appraisal by the guarantee scheme is likely to lead to a duplication of efforts between the scheme and financial intermediaries, because lenders are not likely to completely outsource screening of their borrowers to the scheme. The Korea Credit Guarantee Fund (KODIT), which appraises every loan by itself, had operating costs of 7.7 percent of its guaranteed loans by the end of the 1990s (Honohan, 2009). Colombia's Fondo Nacional de Garantías (FNG) initially also appraised all loans in-house and had operating costs of 4.2 percent of the value of outstanding guarantees. It then switched to a

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<sup>5</sup> See de la Torre, Gozzi, and Schmukler (2015) for a brief overview of public credit guarantee schemes in South Korea.

<sup>6</sup> A similar argument could be applied to the case of loan recovery after default.



system in which lenders can appraise most loans themselves, lowering operating costs to less than two percent of the guaranteed amount.<sup>7</sup> On the other hand, having the lender decide which new loans will receive guarantees might lead to excessive risk-shifting to the guarantee fund, as lenders might not have incentives to adequately screen those loans that will be covered by the guarantee. There are at least two ways of mitigating this problem. First, lenders with high default rates can be charged higher premiums. However, Beck, Klapper, and Mendoza (2010) find that only five credit guarantee schemes covered in their survey (out of 39) apply penalties in case of default.

A second tool for influencing lender's incentives is the coverage ratio, that is, the fraction of the value of an individual loan that the scheme guarantees. When the scheme guarantees less than 100 percent of the value of a loan, part of the credit risk remains with the lender. This helps align the incentives of the guarantor and the lender because it encourages the lender to carefully screen and monitor the loans that are covered by the guarantee scheme. Levitzky (1997) argues that to ensure an appropriate alignment of incentives lenders should assume at least 30 to 40 percent of the risk, and never less than 20 percent. On the other hand, there is a trade-off between lenders assuming a higher share of the risk and making the scheme attractive to them. Levitzky (1997) argues that guarantees with coverage ratios below 50 percent are not likely to be attractive for lenders. In practice, Beck, Klapper, and Mendoza (2010) find that 10 public credit guarantee schemes in their sample guarantee up to 100 percent of individual loans. The remaining 29 schemes in their sample guarantee up to 75 percent of each loan on average, with coverage ratios ranging from 33 percent to 95 percent.

Another important consideration when designing a credit guarantee scheme is how claims are processed. Costly and time-consuming claims procedures can reduce the transparency and credibility of the scheme and might discourage lenders from participating. Therefore, setting clear rules regarding when and how to pay out guarantees, as well as paying claims without a long and costly verification process are important considerations. Green (2003) points out that in many developing countries, early guarantee schemes did not have clear conditions under which a guarantee could be claimed by lenders, leading to disputes between financial intermediaries and these schemes. He argues that introducing a time limit for the settlement of claims might increase transparency and also suggests making only larger claims subject to an extensive inspection before payment is made. Smaller claims can be processed without an ex-ante inspection and can be randomly verified ex-post, which speeds up the overall process.

Finally, another key design issue for public credit guarantee schemes is how to determine the fees charged for their guarantees. There are two separate considerations in this regard. First, how to structure these fees. Some credit guarantee schemes charge a flat fee that is the same for all

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<sup>7</sup> See de la Torre, Gozzi, and Schmukler (2015) for a brief overview of Colombia's Fondo Nacional de Garantías.

types of guarantees. Other schemes charge fees that vary with the characteristics of the guarantee or the guaranteed loan. For example, Brazil's SEBRAE charges higher fees for longer maturity loans (Green, 2003). Colombia's FNG charges fees that increase with the coverage ratio.

The second consideration regarding fees is determining their overall level. In principle, if the credit guarantee scheme has any informational or enforcement advantage relative to lenders or a better ability to diversify risks, it should be able to charge high enough fees to fully cover its administrative expenses and credit losses, plus its opportunity cost of capital. On the other hand, if the public credit guarantee scheme addresses some market failures, this might justify some level of subsidization to lenders by charging fees that do not fully cover all its costs. In practice, most schemes charge annual fees of about two percent of the guarantee amount, which is usually insufficient to cover their operating costs (i.e. administrative costs plus credit losses) (Gudger, 1998; Green, 2003). This can affect the financial sustainability of public credit guarantee schemes, as discussed next.

### **3.2 Financial Sustainability and Impact of Public Credit Guarantee Schemes**

The performance of public credit guarantee schemes in terms of financial sustainability has been mixed, at best. As mentioned above, most of these schemes cannot cover their operating expenses with their fee income. For instance, Beck, Klapper, and Mendoza (2010) find that, of the 15 public credit guarantee schemes in their survey that report complete financial information, 11 have operating losses. The median public credit guarantee scheme in their survey charges 1.5 percent of the guarantee amount in fees, has administrative costs of nine percent, and has credit losses of five percent. Even if fee income does not fully cover their total costs, public credit guarantee schemes can in principle be financially sustainable, as they can make up for operating losses with the investment income from their guarantee funds.

If the investment income is insufficient, the guarantee schemes might require additional government support. Gudger (1998) reviews the performance of a large number of credit guarantee schemes around the world and finds that this has been the case for most schemes. Beck, Demirgüç-Kunt, and Honohan (2008) estimate that the Mexican government subsidizes its credit guarantee scheme each year at a rate of about two percent of the guaranteed loan amount. In the U.K., the same figure is around 15 percent. On the other hand, there are also examples of public credit guarantee schemes that are financially sustainable. Chile's FOGAPE covers all its costs through fee and interest income (de la Torre, Gozzi, and Schmukler, 2015). The SBA Section 7a program in the U.S. requires an annual subsidy of only about 0.1 per cent per of the value of outstanding guarantees (Beck, Demirgüç-Kunt, and Honohan, 2008).

The overarching question related to the impact of public credit guarantee schemes is whether they lead to *financial additionality*, that is, whether they generate additional loans for the

targeted firms and/or allow them to borrow at better terms (e.g., longer maturities, lower rates), relative to what would have happened in the absence of the scheme. Given that the goal of credit guarantee schemes is to improve access to finance for certain groups of firms, their existence is difficult to justify if they do not lead to financial additionality. A further question is whether these schemes lead to *economic additionality*, that is, whether any increases in access to finance that they cause contributes to improving the performance of the supported firms (e.g., higher growth, investment, employment, innovation). An even more difficult question is whether these schemes generate positive spillovers and contribute to overall economic growth.

Accurately measuring financial additionality would require knowing whether the firms that participate in a given credit guarantee scheme would have been able to borrow (or under which conditions they would have been able to do so) in the absence of the scheme. This counterfactual is not observable. Most empirical studies attempt to overcome this identification challenge by comparing firms that have benefited from guaranteed loans with similar firms that have not received guaranteed loans. Most of the existing studies find evidence of financial additionality. For instance, Larraín and Quiroz (2006) and Cowan, Drexler, and Yañez (2015) find that Chile's FOGAPE increased lending to micro and small firms. Similar evidence of financial additionality has been reported for the Small Business Financing Program in Canada (Riding, Madill, and Haines, 2007), the Special Credit Guarantee Program in Japan (Wilcox and Yasuda, 2008), the Small Firms Loan Guarantee in the U.K. (Cowling, 2010), and the U.S. Small Business Administration (Hancock, Peek, and Wilcox, 2007), among many others.

Despite this evidence of financial additionality, there is also evidence of sizable displacement effects and deadweight costs of public credit guarantee schemes. For instance, Benavente, Galetovic, and Sanhueza (2006) find that most firms that participate in Chile's FOGAPE had previously received bank loans and that a large share of guarantees have been allocated to the same firms over time. Zia (2008) finds that almost half of guaranteed loans in Pakistan went to financially unconstrained firms and estimates that this credit misallocation has a cost equivalent to 0.75 percent of GDP. Uesugi, Sakai, and Yamashiro (2010) find that the loosening of conditions for credit guarantees in Japan during the Asian financial crisis led to significant risk shifting, as banks replaced nonguaranteed loans with guaranteed ones to minimize their exposure to risky assets.

Evidence of economic additionality is scarcer, as there are fewer studies on the topic, likely due to the difficulties in gathering the required data and accurately identifying any real effects. Craig, Jackson, and Thompson (2007) find that the employment rate is higher in U.S. districts that receive more guaranteed loans. Oh et al. (2009) find that participation in public credit guarantee schemes in South Korea is associated with increased firm sales and employment growth, as well as higher wages and firm survival rates.

Although a growing body of empirical work has analyzed the impact of credit guarantee schemes, this research faces significant limitations. The main challenge is the identification of an appropriate control group, as firms that do not participate in a given credit guarantee schemes might be systematically different from participating firms. When measuring financial additionality, a further difficulty is that lenders might substitute guaranteed loans for other loans and borrowers might switch across lenders from unguaranteed to guaranteed loans, so that no additional lending might actually occur. Measuring economic additionality also raises some further difficulties. For instance, firms that receive credit guarantees and that grow due to the guaranteed loans could displace firms that did not receive the guarantees, with little or no aggregate effect on growth and employment. Further work is required to address these challenges and accurately identify the impact of credit guarantee schemes.

#### **4. Concluding Thoughts**

This paper provides a brief overview of the international experience with public credit guarantee schemes, which have gained popularity over the last decades. The evidence reviewed suggests that there is large heterogeneity along several dimensions across public credit guarantee schemes, making a rigorous comparative assessment particularly challenging. We conclude with a succinct discussion of some open questions about these schemes.

An important open question regarding public credit guarantee schemes is to what extent public sector intervention is warranted. Although these programs are usually justified based on some social objectives, the rationale underlying the choice of credit guarantees instead of other forms of government intervention is usually left unexplained. Several arguments have been put forward to justify the establishment of public credit guarantee schemes.

The first argument is that these schemes can address information problems in the long run by acting as subsidies for financial institutions to cover the initial costs of learning about a particular group of borrowers. Private financial intermediaries might lack incentives to incur the upfront costs of learning about new borrowers and devising the required lending techniques, as once their efforts prove successful others can easily reproduce them (Besley, 1994; Lapenu, 2001). In this situation, there might be a role for the public sector to foster innovation by subsidizing the initial costs of lending to a new group of firms. According to this argument, public credit guarantee schemes might be operated at a loss while financial institutions accumulate the required expertise and information. This argument implies that credit guarantee schemes need to be designed carefully to provide financial intermediaries with adequate incentives to set up the best technologies and to learn what really works, which requires some degree of risk sharing between the scheme and lenders (Rodriguez-Meza, 2004). According to this argument, once financial institutions learn how to lend to the particular segment, they should be able to continue lending without further subsidies. This implies that subsidies should be temporary and the guarantee scheme should be phased out (or move on to a different target group of borrowers)

once financial institutions have acquired the required experience and information. In practice, however, it might be difficult to determine when this is the case. Moreover, political incentives might make it quite hard to eliminate a credit guarantee scheme once it is established. As Vogel and Adams (1997) point out, there is no evidence of public programs that have been able to eliminate guarantees after a certain period. In addition, even if temporary subsidies to encourage lenders to venture into a new market are deemed necessary, it is not clear whether credit guarantees are the best tool for achieving this goal. Governments could, for instance, provide a direct subsidy to financial institutions for lending to firms in the target sector. In this case the public sector would face no credit risk. However, these direct subsidies would have to be designed carefully to ensure that they reach the desired targets and that they do not generate additional distortions.

A second line of reasoning often used to justify public intervention in credit guarantee schemes is that they can help mitigate principal agent problems. However, this argument only makes sense if the government has an informational or enforcement advantage over lenders, which is not typically the case. One exception could be providing funding to mutual guarantee associations, which have close knowledge of their members, but might not have sufficient capital to set-up a credit guarantee scheme on their own. In this case, government involvement should be limited to the provision of funding, given that the government is unlikely to have any advantage in managing the credit guarantee scheme. Moreover, public funding might exacerbate principal agent problems, as it could reduce the incentives of MGA members to monitor each other, given that fewer of their own resources are at stake.

A third argument that might justify public intervention in credit guarantee schemes is that the state has a natural advantage in dealing with collective action frictions and, as a result, it can spread risk more finely across space and time than atomistic agents (Anginer, de la Torre, and Ize, 2014). Arrow and Lind (1970) show that, when risk is spread in small amounts over large numbers of agents, capital can be priced at risk-neutral prices. They argue that the state's inter-temporal tax and borrowing capacity gives it a unique ability to spread risk.<sup>8</sup> Thus, the state has an advantage in terms of risk bearing relative to risk averse private agents, and state guarantees (as opposed to subsidies or loans) are called for to encourage private investment or lending in the face of high risk or high risk aversion.

Even if there are relevant (theoretical) arguments for the establishment of public credit guarantee schemes, a still open question is whether these schemes are in practice cost-effective

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<sup>8</sup> There is significant debate in the literature regarding the validity of the Arrow-Lind result that the social cost of risk tends to zero as the state spreads the risk associated with any investment project among a large population. Foldes and Rees (1977) argue that under a more realistic formulation of fiscal policy, this result only holds under very stringent assumptions and therefore the practical circumstances in which the Arrow-Lind conclusions apply are extremely restricted. Gardner (1979) shows that the Arrow-Lind results only hold if the investment risk is arbitrarily small.

mechanisms for achieving the desired objectives. Answering this question requires at the very least showing that these schemes have financial and economic additionality. However, additionality by itself is not enough to justify the use of public funds; the relevant question in this regard is whether this additionality and any associated benefits compensate for or exceed the required government funding.

Rigorous cost-benefits analysis of these schemes would be desirable and they would need to be assessed against alternative government interventions. Of course, this is easier said than done. But governments could do a more systematic effort to facilitate ex-post assessment. This includes improving the availability of firm-level data and SME credit statistics and gathering detailed data on the firms that participate in these schemes. On the cost side, providing accurate accounting data on the expenditures and incomes of public credit guarantee schemes on a regular basis would be necessary to assess their performance and sustainability. To facilitate identifying the degree of subsidy that each program entails, the pricing of guarantees would need to be as transparent as possible, and governments might want to avoid bundling several services (e.g., credit and guarantees) together. To the extent possible, data should be shared with external evaluation units and the academic community to allow them to conduct studies and compare the additionality of different programs.

From a positive perspective, public credit guarantee schemes have some features that can make them politically attractive. First, as Honohan (2009) points out, the resemblance of credit guarantee schemes to market-based institutions can make them seem more legitimate in the eyes of the public than directed credit or loan subsidies, facilitating their establishment. Second, public credit guarantee schemes require relatively small cash outlays, at least initially before credit losses materialize, and can guarantee a large volume of loans with a comparatively small capital base. Once a credit guarantee scheme is operating, more government funding might become necessary if the scheme is not financially sustainable. However, governments might be able to conceal the true fiscal cost of the credit guarantee scheme for a politically sufficient duration through overoptimistic pricing and blurred accounting. This might make credit guarantee schemes attractive to opportunistic or self-serving politicians. However, the costs and contingent liabilities of these schemes could also be explicitly reported and analyzed, as it happens in some countries.

To conclude, public credit guarantee schemes can constitute useful mechanisms for increasing access to finance for certain groups of borrowers. However, their success and financial sustainability hinge on proper design. The disappointing experience with many public credit guarantee schemes, especially in developing countries, suggests that getting the design right might constitute a significant challenge. Moreover, rigorous evidence on the impact of public credit guarantee schemes is still scarce. There is a need for more in-depth evaluations that jointly take into account financial sustainability and additionality and that assess these schemes against alternative policy instruments.

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