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PARTIAL CREDIT GUARANTEES:
PRINCIPLES AND PRACTICE

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Abstract

Partial credit guarantee schemes have experienced renewed interest from governments keen to promote financial access for small enterprises, not least as a response to the credit crunch in advanced economies. While the market can find uses for partial credit guarantees, the attractions for public policy can be illusory: indeed their most attractive feature for myopic politicians may be the ease with which the true cost of guarantees can be understated, at least at the outset. In practice, the actual fiscal cost of existing schemes has varied widely across countries and has represented a high per dollar subsidy in some cases. Despite the recent application of some innovative techniques, the social benefit of such schemes has proved difficult to estimate, not least because their goals have been vague. Operational design has influenced the cost and apparent effectiveness of different schemes and has also varied widely. Clear and precise goals, against which performance is regularly monitored, realistic pricing verified by consistent and transparent accounting, and attention to the incentive features of operational design, especially for the intermediaries, are among the prerequisites for such schemes to have a good chance of truly achieving improvements in social welfare.

1. **Introduction**

With direct and directed lending programs somewhat in eclipse in recent years, the direct intervention mechanism of choice for Small and Medium Enterprise (SME) credit activists in recent years has been the government-backed partial credit guarantee.

According to Green (2003), well over 2000 such schemes exist in almost 100 countries. Thus more than half of all countries – and all but a handful of the OECD countries – have some form of credit guarantee scheme, usually targeted at some sector, region or category of firm or individual which is thought to be underserved by the private financial sector. In addition, all of the multilateral development banks have guarantee schemes as well as loans and other instruments. Such schemes seek to expand availability of credit to SMEs, sometimes focused on specific sectors, regions or ownership groups, or on young or new technology firms (or even on firms that have been hit by an adverse shock and risk failure). Often there is a subsidiary employment, innovation or productivity growth objective. The scale of these schemes varies widely, with Asia having the largest schemes – with outstanding guarantees amounting to an average of 5 per cent in the six Asian countries included in the survey by Beck et al. (2008).

The upward trend likely reflects more the disappointing experience of other forms of intervention than any substantial body of evidence that publicly funded partial credit guarantee schemes work well. Indeed, as has been remarked by numerous commentators, it is often unclear what the precise goals of these schemes are, which makes cost-benefit analysis highly problematic.

Reflecting the deepening financial crisis in mature financial systems, and the drying-up of credit, there has been a raft of new partial guarantee announcements from Governments since September 2008. In many cases these new schemes are, at the time of writing only at the design stage, or have just begun operation.[1]

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[1] Many of the guarantee schemes recently announced are in quite different categories to that being considered here. Some guarantee bank depositors, or even investors, as with the special temporary guarantee program for investors in money market mutual funds announced by the US Treasury in late September 2008. Government agencies in the US, UK, Germany and elsewhere have been offering to

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Setting the scene for this special issue on partial credit guarantees, this paper argues that guarantee schemes offer several features that are seductive for politicians and administrators. The family resemblance that they bear to market-based institutions gives them an unwarranted public legitimacy, as do the evident market failures that exist in small business finance. Overoptimistic pricing and blurred accounting can conceal the true fiscal cost of schemes for a politically-sufficient duration. Relatively small cash outlays (at least initially) can leverage large numbers of loans and volumes of lending for which the political system can take credit. In all of these dimensions guarantee schemes politically outperform direct government lending programs.

Despite this heightened vulnerability of credit guarantee schemes to opportunistic or self-serving politicians, they can offer genuine advantages over direct government lending. The risk-sharing element with profit-oriented intermediary banks generates an independent creditworthiness hurdle for borrowers, and can also help bring transparency inasmuch as the intermediaries are aware of the loan-loss experience. By outsourcing the origination and servicing of the loan to a for-profit intermediary, operational efficiency may be improved. Besides, it is clear that market failure exists for SME lending and a well-designed and well-targeted policy intervention *might* improve welfare.

Against that background, we begin (Section 2) by asking what the point of a loan guarantee is, pointing to the potential roles of differential information, risk-spreading and regulatory arbitrage in inducing the emergence of for-profit provision of such guarantees in the market. Section 3 turns to the diverse motivations for having government-sponsored schemes, considering both social welfare goals and the private interest of policymakers (public choice theory). We proceed to review evidence on the costs of existing schemes (Section 4), noting the very wide range of outcomes that have been experienced worldwide. The literature has begun to respond to earlier complaints about the paucity and lack of robustness of most cost-benefit studies in

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guarantee Interbank and other borrowings by banks many countries from October 2008 And the guarantee against exceptional losses given by the US Treasury to Citigroup as part of its rescue package in November 2008 relates to an existing block of securities, rather than covering new lending; the same is true of one of the large schemes announced for British banks in January 2009. Finally some of the guarantee schemes are aimed at large firms, such as the German scheme availed of by Volkswagen in late 2008.

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this area. The challenge of obtaining good benefit estimates remains, however, as we discuss in Section 5. The effectiveness of guarantee schemes in mobilizing the resources and skills of market intermediaries, and the likely benefit outcomes are considerably dependent on operational design (Section 6). Concluding remarks are in Section 7. We focus on guarantees for small business/small enterprise lending and in particular say little about programmes focused on guaranteeing exports credits against purchaser default.[2]

2. **Why the market uses credit guarantees**

Of course, credit guarantees are observed in private financial markets without explicit government support, as do their close cousins, credit derivatives. They emerge typically for one of three main reasons.

– First, because of differential information, as where the borrower's creditworthiness is better known by a well-capitalized guarantor than by the lender. The operation of mutual guarantee associations provides an illustration here,[3] as does the guaranteeing of a supplier's borrowing by the purchaser.

– Second, as a means of spreading and diversifying risk, for example where the lender's portfolio is geographically concentrated, but the guarantor has a diversified portfolio.

– Third, as a regulatory arbitrage. This can occur when an unregulated firm provides a guarantee allowing the lender to bring an otherwise insufficiently

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[2] With their focus on the creditworthiness of foreign customers, including political risk, their wider diplomatic and political goals, and their potential importance, where subsidized, as distortions of trade, export credit guarantees raise additional questions not treated here (cf. Stephens, 1999, Auboin and Meier-Ewert, 2004).

[3] Cf Columba et al. (2008) who provide a detailed analysis of the extensive network of Italian Mutual Guarantee Consortia. According to their analysis, based on extensive data on individual loans from the official Italian credit register, the peer monitoring and enhanced mutual information of the members of these consortia (which are typically based on industry associations) allow their members to negotiate lower lending rates (by about 20 basis points) on otherwise uncollateralized loans from the banks, without incurring a net loss on the guarantee operation: indeed, membership of a consortium is clearly associated with lower default rates, especially in the South of Italy where creditworthiness information is otherwise not easily available. The effectiveness of these consortia appear to be increasing in size up to about 8500 firms.

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secured loan into compliance with regulatory requirements or other government programs or financial industry risk-rating practices and conventions (as in US mortgage insurance[4]). Another important case of regulatory arbitrage is when the guarantee premium is used to bring the total servicing charge for the loan above a regulated ceiling on lending interest rates and thus closer to a market-determined interest rate.[5]

It will be obvious that the second and third motivation have also been given as reasons for the development of mortgage and other asset-backed securities. However, when the originators of mortgage loans and other loans packaged into such securities did not retain any of the risk, it is clear that the first motivation did not apply in that market and for those instruments.

This paper focuses on *partial* credit guarantees, i.e. where the lender retains some of the risk. There are many variants, starting with the *pari passu*, where lender and guarantor each absorb a fixed fraction of any loss, and the *first-loss*, where the guarantor pays out on all of the loss up to some fixed fraction of the total loan obligation. Each has different incentive features and costs.

3. **Motivation for government involvement**

It is less clear what specific market failure causes *guarantees* to be undersupplied (as distinct from credit in general). Undersupply of credit generally could come from information problems resulting in equilibrium credit rationing as discussed in the famous model of Stiglitz and Weiss (1981). It does seem clear that lack of credit is a binding constraint on enterprise and SME investment, most strikingly illustrated by the increased enterprise and very high returns achieved by persons endowed or gifted with additional capital sums (cf. Blanchflower and Oswald, 1998; McKenzie et al., 2007).

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[4] Regulatory requirements constraining some lenders from making uninsured mortgage loans with a loan-to-value (LTV) ratio above 80 per cent has strengthened the private mortgage insurance (PMI) market in the United States, which, thanks to market conventions, also helps ensure high credit ratings and thus lower yields for bonds backed by high LTV mortgages that are not insured by Federal Agencies (Green and Wachter, 2005).

[5] There have been suggestions that this mechanism has underpinned the rapid growth in guarantee schemes in China in the last decade or so.

(a) *Social welfare*

Government involvement in creating a credit guarantee company is often rationalized by the observation that SMEs commonly do not have the kinds of collateral that are required by bankers. Of course this statement just describes the dimension along which the credit guarantee operates to alter the allocation of credit. It begs the question whether the resulting change in credit allocation improves overall welfare.

Note, moreover, that a third-party guarantee cannot be a perfect substitute for a collateral of equal value in the credit appraisal. By posting a collateral of value to them, borrowers provide a signal of their information and intent. Furthermore, the existence of a valuable collateral can act as a deterrent to moral hazard thereby reducing the likelihood of default happening. (These points are well-known and long embodied in the theoretical literature, cf. Besanko and Thakor, 1987).

On the other hand, banking reliance on collateral tilts the incentive for borrowers towards acquiring machinery which can be financed on credit; availability of a third-party guarantee may allow the borrower to use a less capital-intensive technology if appropriate.

Given that financial markets are not perfectly efficient, a decision by the government to step in, where private financiers have not found it profitable to do so, need not necessarily involve subsidy and fiscal outlay, though typically it does.[6] With many competing pressures for public funds, an economically coherent argument in favor of a *subsidized* credit guarantee system needs to go a lot further than the observation that such a scheme would increase availability of credit.

Admittedly, by comparison with direct government lending to preferred sectors or types of borrowers, a partial credit guarantee has the clear potential advantage of sharing the credit risk and at least partially outsourcing credit appraisal to an independent risk-taker, namely the intermediary whose loan is being guaranteed.

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[6] For example in every one of the 25 EU member states, according to Dorn (2005); 47 EU schemes are reviewed by Gracey (2001).

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But the government still needs to be sure that such a scheme will increase overall welfare by enough to justify the subsidy cost, and not simply result in a costly distortion.

A welfare economics perspective suggests three possible sources of from which a net welfare improvement could come: information-based market failure; externalities and distributional arguments.

–   *Market failure related to adverse selection.* One well-known line of reasoning points out that a lender increasing the interest rate to protect against adverse selection may worsen the adverse selection to the point where further increases actually lower the expected return on lending. If so, lending may be rationed and undersupplied relative to the social optimum, and in such circumstances a credit subsidy might improve overall welfare.   This might be especially important at times of heightened risk or risk aversion as during a credit crunch (cf. Hancock et al., 2008)

Note, however, that this line of reasoning is less general than is often portrayed. Depending on the exact nature of project risks and of the information asymmetries as between lenders and borrowers, the market failures might even result in more lending than is socially optimal (DeMeza and Webb, 1987; Besley, 1994, DeMeza 2002). The successful operation of Microfinance Institutions (MFIs) charging high interest rates shows that this problem is not decisive in all markets.

It is often remarked that a loan guarantee scheme will help the small business market avoid the adverse information problem that leads to credit rationing in Stiglitz and Weiss' model, essentially because the interest rate will be lower. This could obviously be true if the guarantor had an information advantage relative to the bank. But how this would work for an unsubsidized or break-even scheme not benefiting from special information is not clear. It is doubtful that the information problems facing a government-sponsored loan underwriter would be any less than those facing the private lender.

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–   *Correcting for unequally distributed endowments*. A distributional argument could also be applied. Lack of collateral is most acute for low wealth individuals and groups of people, and for poorer geographical areas. However, it is far from clear that credit allocation is the best or even a good instrument to correct for unequal initial endowments.

Indeed, it is often noted that much of the subsidy element in government credit interventions is likely to go to established small business entrepreneurs or indeed to the shareholders of intermediary banks (for early trenchant statements of this perspective see Adams, Graham and Von Pischke, 1984).

Closely related to this point, though, is another subtly different rationale

–   *Exploiting externalities from the entrepreneurial dynamism of under-resourced entrepreneurs*. Funding the activities of a segment of the population excluded from credit because of their lack of collateral and the inability of for-profit intermediaries to appraise them reliably could generate significant externalities.

The goal here is, thus, not specifically to help the borrower, but to exploit the wider benefits which his or her activities could generate. This dimension has an almost unknowable potential; nevertheless, it may represent the most coherent rationale for sustained intervention in the small business credit market. On the other hand, the idea that extending financial access – as distinct from deepening the financial system overall – has a reliably strong impact on economic growth still lacks robust econometric evidence (Demirgűç-Kunt, Beck and Honohan, 2008).

Time-bound intervention could be justified in a slightly different way:

–   *Kick-starting SME lending*. A kind of infant industry or learning-by-doing argument is also often mentioned. SME lending is not well-developed in part because lenders have not accumulated the needed practical experience and the stock of credit information, and therefore face a lengthy loss-making start-up

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period. Credit appraisal and management can build on experience including system-wide credit history data and credit scoring. Eventually the lenders may acquire sufficient skill and information to lend to the sector without subsidy.

− *Offsetting a credit crunch*. Sudden increases in uncertainty, making risk calculations difficult or impossible, can contribute to transitory credit crunches where the market fails due to a transitory surge in information deficiencies. Socializing such business-cycle uncertainty on a transitory basis might be welfare improving.

Reading between the lines of the diverse and often rather vague stated goals of publicly-sponsored credit guarantee schemes in the attempt to glimpse the ultimate objectives that their promoters had in mind,[7] one can usually detect hints of one or more of these economist's arguments, perhaps most often the last one mentioned. Whether these goals are fully achieved and at what cost is something that has never been evaluated in a fully satisfactory way even after the event, much less in advance. Such evaluations as have been carried out focus on operational aspects such as ensuring on the one hand that there is sufficient take-up, but on the other hand that the cost of the scheme remains within bounds.

Before looking more closely at estimated costs and benefits, we must also consider motivations other than social welfare.

(b) *Public choice*

Various levels of government, as well as non-profit agency, are involved in sponsoring partial credit guarantee schemes. At one end of the scale, some schemes are sponsored by subnational or city governments; at the other end, all of the World's regional development banks operate some form of guarantee scheme at the multi-country level. Donor agencies to MFIs have become involved in offering cross-border guarantees to their client MFIs (Flaming, 2007). Not all of these bodies are subject to political bias or interference, but some may be.

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[7] Even in the UK, the stated purpose of the government's SFLG scheme has been simply the limited instrumental one of assisting "SMEs who have a viable business plan but lack the collateral necessary to secure the loan that they seek." Nitani and Riding (2005) include a convenient listing of stated goals of credit guarantee schemes in seven industrial economies.

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For self-interested politicians or officials also may have an interest in using the establishment and operation of a credit guarantee scheme quite independently of social welfare considerations.

Indeed, guarantee schemes offer several features that are seductive for politicians and administrators.

- The family resemblance that they bear to market-based institutions may confer in the eyes of the public an apparent legitimacy to these schemes that (given the failures of the past) is no longer shared by directed credit and loan subsidy schemes as devices to overcome the evident market failures that exist in small business finance.

- Overoptimistic pricing and blurred accounting can conceal the true fiscal cost of schemes for a politically-sufficient duration.

- Relatively small cash outlays (at least initially) can leverage large numbers of loans and volumes of lending for which the political system can take credit.

For each of these three reasons guarantee schemes can seem to politically outperform direct government lending programs.[8] But they do so only to the extent that the schemes are publicized and accounted for in a technically deficient, non-transparent or meretricious way. As such, credit guarantee schemes arouse a natural suspicion among policy analysts. If politicians are tempted to use credit guarantee schemes to conceal, dissimulate or procrastinate, then this warrants extra care in ensuring transparency and robust accounting for both costs and benefits if the performance of such schemes is to be appraised adequately.

4. **Scheme costs**

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[8] But provision of subsidized funds for on-lending has not been wholly displaced by guarantee schemes. As a conspicuous example, there is the large publicly-funded SHG-Bank Linkage Program in India. This provides subsidized refinancing (by the National Bank for Agriculture and Rural Development, NABARD) of bank loans to self-help groups (SHGs), directly benefiting about 14 million households, but offers no loan-loss guarantee to the bank. It offers liquidity, not risk-sharing.

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The cost issue sometimes attracts less attention in the early days of the scheme. Indeed, as mentioned, governments are often drawn to such schemes precisely because the upfront cash commitment can be small in relation to the total volume of credit supported by such schemes. The liabilities are contingent and in the future, while operating costs can be covered by fees and premiums paid by beneficiaries. The endowment[9] of capital may be a small fraction—perhaps as low as 5 per cent—of the allowed total sum guaranteed, and need not be paid in cash. In due course, loan losses do emerge; the adequacy of the fees and premiums becomes evident only over time as the contingent liabilities inherent in this soft budget constraint crystallize.

The most conspicuous cost comes from these underwriting losses; they are typically, though not always, much larger than administrative expenses. Of course, it has long been recognized in official circles that accounting provision should be made for foreseeable losses in advance. To quote one decade-old manual on government accounting for credit guarantees: "While the old method recorded guarantees only when a default occurred, new methods seek to anticipate losses, create reserves, and channel funds through transparent accounts to ensure that costs of guarantees are evident to decision makers" (Mody and Patro, 1996). This principle is clearly embodied in the current International Financial Reporting Standards (FRS37 and 39).[10] But even in the United States, where the Federal Credit Reform Act of 1990 already placed the accounting of government guarantee programs on an accruals rather than cash basis, it appears that accounting practice favors guarantee programs at least if one is to extrapolate from the experience of student loan programs, where the guarantee program embodies a subsidy up to three times that embodied in an otherwise comparable direct lending program (Lucas and Moore, 2008).

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[9] Most, though not all, schemes are funded, and leverage can be quite high – as much as 26 to 1 in Germany (Doran and Levitsky, 1997).

[10] These envisage that, as with all financial liabilities, financial guarantees granted should be recognized from the outset in the balance sheet of the guarantor at fair value plus transactions cost. Subsequently, the guarantees should be valued at "the best estimate of the expenditure required to settle the present obligation at the balance sheet date". FRS37 notes that "where the provision being measured involves a large population of items, the obligation is estimated by weighting all possible outcomes by their associated probabilities." Quotations from the Technical Summaries of each IAS prepared by the staff of the International Accounting Standards Committee (IASC) Foundation and posted on the website of the International Accounting Standards Board (IASB) (www.iasb.org) (as of 1 January 2007, accessed 4 February 2008).

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Measuring costs after the event presents fewer technical difficulties. But estimating the probability of future underwriting losses is not as easy as it might seem, especially at start-up, and this means that the application of these accounting principles still leaves plenty of room for over-optimism.[11]

The basic theory is relatively clear (cf. Mody and Patro, 1996), in that providing a loan guarantee is like selling a put option on the project being financed. Standard models indicate that the fair price of such an option increases with the loan's riskiness and maturity. But, especially if the target group has not hitherto been borrowing, there is little experience on which to project defaults and the consequent losses. Furthermore, default experience is highly dependent on the state of the business cycle, so that it is unwise to extrapolate from the experience of a few years. If there is a major economic downturn, then default rates and losses given default can soar, as was seen in several East Asian countries in the late 1990srecent years, and in mature economies since 2007.[12,13]   As we have seen from the sub-prime crisis, the less risk the loan originator intends to retain, the less strict will be the loan underwriting; in just the same way, a generous loan guarantee scheme can be expected to increase the average default ratios.[14]

The net fiscal cost will tend to depend on the scope of the scheme, the extent of deliberate underpricing and unexpected excess underwriting losses, as well as on administrative efficiency. In practice there has been an enormous range of experience with regard to net fiscal cost, as emerges from cross country studies (such as Meyer and Nagarajan, 1996, Gudger, 1998, Bennett et al., 2005 and Doran and Levitsky,

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[11] Even the US Small Business Administration (SBA)'s long-established SME guarantee scheme (the so-called Section 7a scheme) has been criticized by the government auditor for inaccurate underwriting loss projections (US General Accounting Office, 2001). Curiously, though, the SBA erred on the conservative side in this matter: its actual underwriting losses turned out considerably lower than had been budgeted.

[12] The ill-fated Asian Securitization and Infrastructure Assurance (ASIA) Pte. Ltd., established in 1995 by a consortium of private and public enterprises to guarantee credit losses on cross-border bond issues in East Asia, succumbed to the East Asian financial crisis in 1998 only three years after its establishment.

[13] Interest rates also prove to be a striking correlate of small loan guarantee defaults in the UK, according to Cowling and Mitchell (2003), who regard this finding as evidence supporting the credit rationing theory of Stiglitz and Weiss (1981).

[14] Though probably not to the point that the lending bank assumes more risk. Nor has any tendency for a partial guarantee to become a de facto total guarantee been reported as a problem in practice.

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1997) and from a comparison of individual case studies. Information is, however, sketchy and not fully comparable across countries.

Adequacy of any given rate of charge evidently depends on system rules and underwriting efficiency. Some relatively current examples referring to large schemes follow, suggesting a range of net fiscal cost of between zero and at least 15 per cent per annum of outstanding guarantees:

− The Chilean Fondo de Garantia Para Pequeños Empresarios (FOGAPE) scheme has increased its annual charge to between 1 and 2 per cent of the loan amount depending on the claims performance of participating banks: the charges have to date been sufficient to cover the administrative expenses of the scheme as well as claims (Benavente et al. 2006; Bennett et al., 2005; De la Torre, Gozzi, and Schmukler, 2007).[15]

− The long-running SBA Section 7a program in the United States entails the equivalent of a *one-time* subsidy of only about 1.3 per cent of the value of the guaranteed loans, including provision for calls on the guarantee and operating expenses. This works out at about 0.1 per cent per annum of the outstanding stock of loans, given the average maturity of 13 years (US General Accounting Office, 1996).[16]

− The annual subsidy for the Italian small loan guarantee scheme grew to about 1 per cent of the amount guaranteed by 2004 (Zecchini and Ventura, 2008).

− The 1.35 per cent fee for the large (¥30 trillion) Japanese Special Credit Guarantee Program of 1998-2001 was already proving to be far too little by 2002 when loan guarantee payouts to city banks reached 3½ per cent of the stock of guarantees (Wilcox and Yasuda, 2008). (Unusually the public guarantee under this scheme covered 100 per cent of the loan value).

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[15] Schemes in Malaysia and Thailand have also required very little subsidy over the years; on the other hand, several in the Philippines have recorded sizable operating losses (Adams, 2005, Gudger, 1998).
[16] A recent estimated of the budgetary cost of US student loan guarantee schemes puts their subsidy much higher – averaging over 30 per cent of the loan amount or perhaps 250 basis points per annum, given the long maturity of most guaranteed student loans (Lucas and Moore, 2008).

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- − The charges of between 0.5 and 4 per cent of the sum guaranteed made by Mexican schemes seem too low, given the scale of the guarantee involved (Benavides and Huidobro, 2008); one estimate of the break-even charge is 1.4 percentage points higher than the actual.

- − The very large Korean Credit Guarantee Fund charges between 0.5 per cent and 2 per cent depending on the borrower's credit rating, with an average of just over 1 per cent, but this revenue covers only a fifth of the scheme's outlays. Indeed the two major Korean schemes operated at a loss of almost 4 per cent per annum of the stock of outstanding guarantees in 2001-5 (Shim, 2006).

- − Over the years, the (much smaller) UK Small Firm Loan Guarantee (SFLG) scheme—which charges an annual 2 per cent fee—had experienced defaults on more than one in three of its guaranteed loans requiring a subsidy amounting in a recent year to 15 per cent of gross new guarantees in that year (Graham, 2004).[17, 18]

In some cases, the composition of loss experience is available by size of firm. For instance Riding and Haines (2001) found that, in the Canadian scheme, it was the larger guaranteed loans that were more likely to fail: only about 3.4 per cent of loans of less than C\$ 25,000 defaulted, compared with a figure of more than 10 per cent for loans in excess of C\$75,000 (before a change in scheme design in 1994). Combined with their larger size, this differential default rate meant that most of the \$ cost per loan guaranteed was incurred on the larger loans.

Thus, while numerous schemes have experienced much higher than expected losses, heavy and unanticipated underwriting costs is by no means a universal experience of credit guarantee schemes (Doran and Levitsky, 1997; Bennett et al. 2005), and the cost of losses is not necessarily skewed towards the smallest borrowers. This is

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[17]UK figure is 2003-4 outlay divided by that year's flow of new guarantees, per Graham (2004), para. 1.12: using average of previous 10 years' new guarantees would give a much higher figure.

[18] Even higher payout ratios are known elsewhere, for example figures of the order of 40 per cent are reported for Nigeria by Mafimisebi (2008).

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consistent with the belief of many bankers that SME loan losses can be held to acceptable levels through good credit appraisal and monitoring practices, but that it is the cost per loan of appraisal and monitoring that undermines the profitability of SME lending. If so, a fully-priced credit guarantee scheme may not need to be very expensive for the guarantor, but it may also not be enough to attract bankers into the market for loans to the target group.

5. **Measuring benefits**

If it is difficult to estimate the likely future cost of a credit guarantee scheme, it is even more difficult to evaluate the social benefit that results. Evidently the volume of loans guaranteed is a wholly inadequate measure of social benefit.[19]

(b) *Additionality*

First, there might be no additionality (sometimes called incrementality) involved even for the individual borrower, or for the system as a whole. That is to say, the loans might have been forthcoming anyway even in the absence of the guarantee. Measuring the scale of this problem has been a central concern of the literature certainly since the 1987 survey by Levitsky and Prasad (1987) (cf. Meyer and Nagarajan, 1996). Some authors have been extremely skeptical (cf. Vogel and Adams, 1997). On the other hand, additionality might be greater than the loan amount guaranteed, as receipt of the guarantee might leverage a much more substantial un-guaranteed financing package.

Most evaluations of guarantee schemes rely on the qualitative assessment of bankers and SME insiders to tell whether availability of credit to them has eased. For instance, Boocock and Sharrif (2005) made a detailed study of 15 beneficiaries of the Malaysian scheme, seeking through interviews to judge what financing would have been obtained and what level of business activity reached in the absence of the scheme. (This exercise produced an estimate of additionality of 37 per cent –

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[19] This point is stressed by Bosworth et al. (1986), though their maxim, that the effect of US Federal Credit Programs (including guarantees) is best measured by the magnitude of the subsidy involved, is not particularly helpful in sorting out cost-benefit issues.

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appreciably lower than that obtained from a simple questionnaire administered to a larger set of beneficiaries.)

In their study of the Canadian scheme, Riding and Haines (2001) invite the reader to conclude that, since less than 5 per cent of total bank loans are to "young firms", i.e. those less than 1 year old, the fact that over 14 per cent of guaranteed loans under the Canadian Small Business Loans Act (SBLA) scheme are to "young firms" implies additionality of at least the 9 per cent differential. Whether such an assertion is regarded as plausible would depend very much on the detailed rules of the scheme and the degree to which they are enforced. After all, not all lending is eligible for the guarantee, so a mere diversion of all existing eligible lending into the scheme without additionality would tend to result in a higher share of loans in any given category of borrower over-represented in the population of *eligible* borrowers. As far as old firms are concerned, Riding and Haines (2001) include as additional all those respondents who both "believed that the firm would not have obtained the debt capital but for the SBLA *and* […] did not hold assets that could be pledged for the loan (other than the asset being financed)." They also treat as entailing additionality any respondents who believed they "would have failed, save for the SBLA." Using these definitions, and respondents' beliefs regarding the additional employment (typically 3-9 persons) that had resulted from the SBLA assistance in the following year, Riding and Haines arrived at a cost-per-job-year range of between C$1000 and C$3000 which they regard as modest.[20]

In an alternative to asking borrowers whether they would have got the loan otherwise, for the Philippines, Saldana (2003) estimated additionality by counting only those loans for which bankers held amounts of collateral that fell short of total loan value. Only a half of the loans guaranteed by the Philippines scheme (in 1991) fell into this category, again suggesting significant deadweight. Less than fully-collateralized loans are, of course, not a fully convincing measure of additionality.

Depending on the design of the scheme and in particular on the nature of eligibility rules, it can sometimes be possible to use formal econometric methods to throw light

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[20] They assert that it is not difficult to argue that the incremental tax revenues from individuals and businesses result in significant net benefits, though this implicitly assumes a low shadow-price of labor.

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on the question of additionality, but only a few systematic attempts seem to have yet been made to do this.

As an example of the kind of situation that lends itself to such methods, consider the specific policy change in Pakistan that allowed Zia (2008) to uncover credible evidence of very substantial deadweight (lack of additionality) in that country's scheme of subsidized credit for exporters. In this case, the key natural experiment allowing identification of the impact of subsidized export credit was the removal of one important sector, cotton yarn, from eligibility for subsidy. Apparently the authorities wanted to concentrate available funds on higher value-added export sectors. The sector – which had accounted for over one half of the 100,000 individual loans made in the scheme between 1998 and 2003 – survived this removal with output and exports almost unaffected. While some smaller, unlisted firms without multiple banking relationships were hit by the change, the larger firms just saw a reduction in their profits. An estimated one-half of the subsidized funds had gone to financially unconstrained firms which did not need it. Interestingly, it was not systematically the less productive firms that were hit by the subsidy removal. However, this was a directed credit scheme rather than a guarantee scheme *per se*. Finding a similar identifying policy change in a credit guarantee scheme would greatly help pinpointing additionality.

Another study of the Canadian system by Riding, Madill and Haines (2007) exploits a more detailed dataset on loan applications to Canadian banks to arrive at a much more convincing estimate of additionality. By estimating a loan denial function on data for loan applicants that were not eligible for the loan guarantee scheme, they are able to predict how many of those firms that successfully applied under the scheme would otherwise have been denied. (In effect, Riding et al. are here mimicking the credit scoring methodology that has become standard at least in advanced economies for appraising small business lending; cf. Berger and Frame, 2005). Based on their estimates and simulations, they conclude that 75 per cent of guarantees generated additional loans, with a 95 per cent confidence interval of +/- 9 per cent.

By distinguishing between the experience of Chilean firms whose main bank began using the FOGAPE scheme at different times, Larraín and Quiroz (2006) estimated

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that microfirms whose bank used the FOGAPE scheme had a 14 per cent higher

probability of getting a loan. At the same time, Benavente et al. (2006) note evidence

of sizable displacement in the scheme, for example, the large and growing share of

successive guarantees being granted to the same firms.[21] Cowen et al. (2008) found

that usage by lenders of FOGAPE insurance was associated with an expansion of

lending to "insurance-intensive" sectors, but not to other sectors, a finding which they

auggest (using a difference-in-difference argument) implies that guarantee usage did

result in additionality.

A 1995 change in the eligibility rules for the French Loan Guarantee Program

SOFARIS allowed Lelarge et al. (2008) to adjust for selection bias in estimating the

effects of the scheme. They found good evidence of additionality: firms newly

eligible for the program raised more external finance (and paid lower interest rates)

than other firms, but there was no evidence of an impact of the scheme on entry of

new firms.

Additionality might be more likely to occur during credit crunches, where bankers

risk aversion and perceived risk are higher than normal. Hancock et al. (2008) find

some evidence of such an effect in the US, where SBA-guaranteed

loans prove to be less procyclical and less affected by capital pressures on banks than

are non-guaranteed loans. As a result, they argue that SBA guarantees tend to stabilize

the economy. Further evidence of this type of effect comes from the sizable

expansion in the late 1990s of publicly-sponsored guarantees under the Special Credit

Guarantee Program in Japan, where (according to the analysis of Wilcox and Yasuda,

2008) additional, non-guaranteed lending by a city bank to a borrower availing of a

publicly funded loan guarantee was considerably larger than the guaranteed loan.

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[21] Among other recent attempts to use quantitative information to estimate additionality is Zecchini and Ventura (2006), who compare data on some 4000 Italian firms eligible for the small loan guarantee scheme and 6000 controls – firms who because of their sector were not eligible. Estimating a regression equation explaining the level of bank borrowing by firm in terms of the firm's number of employees, sales, tangible and intangible assets, nonbank debt, net worth and net earnings, they find that, even after taking account of eligibility (using an instrumental variables technique) a firm's use of guarantees is associated with a modestly higher level of bank borrowing (about 10-13 per cent). Another widely-cited econometric effort was KPMG (1999), but this looked only at assisted borrowers and did not include a control group. For the US, Brash and Gallagher (2008) recently examined the post-loan performance of beneficiaries of SBA assistance, but again there were no control groups.

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(b) *Factors other than additionality*

Secondly, even if there is additionality, it might involve such heavy loan losses or transactions costs as to result in net welfare losses for the economy as a whole. For example, each of the additional jobs created by the French program studied by Lelarge et al. (2008) entails a (one-time) subsidy amounting on average to about one month's wages.

Even if fiscal costs are low, the economic costs of misallocated resources can be high. While it is clear that public interventions into the credit market will tend to have distorting incentive effects, these distortions are subtly different depending on the type of scheme, for example, resulting in too much entry, too much risk, too little monitoring or entrepreneurial effort or in rent-seeking behavior (cf. Arping et al. 2008).

While the French scheme seemed to allow beneficiary firms to grow more rapidly, they also had a much higher probability of bankruptcy. (In the Pakistan case, Zia calculated that diversion of unneeded credit to beneficiary firms could have held GDP below its potential by ¾ per cent.)

Spillover effects of additional lending attributable to the scheme do need to be taken into account. These could be positive or negative depending for example on whether the scheme had the effect of kick-starting productive activity in a specific area with favorable spin-offs, or whether the scheme instead promoted new producers only at the expense of displacing non-beneficiaries. A macro approach to capturing all such spillovers is illustrated by Craig, Jackson and Thompson (2007), who use US regional data to detect any differential employment growth in areas which have disproportionately benefited from SBA-guaranteed lending. Their results (for the main Section 7a program)[22] suggest that districts with more SBA-guaranteed lending per $ of total bank deposits have higher employment rates. Given the limited explanatory power of the underlying model to explain regional differences in employment rates, though, and the small size of any expected effect of the guarantee

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[22] This program has about a quarter of a million loans outstanding, with an average balance per loan of about a quarter of a million dollars, and accounts for more than 10 per cent of the value of all small business loans by banks.

program, this strategy is vulnerable to omitted variables bias—and indeed the authors note that, absent independent data on non-guaranteed small business lending by district, it is impossible to rule out the interpretation that the data on SBA loan guarantees is simply proxying for all small business lending in the market.

In section 3 above we argued that two basic rationales for government intervention to expand small business lending seemed most promising, namely (i) the time-bound one of kick-starting the financial market's capacity and appetite for small business lending and (ii) the long-term one of energizing entrepreneurs excluded because of lack of collateral in the hope of generating dynamic medium-term externalities not easily captured by the market.

If one or both of these is the main goal of the policy, then the data collection effort should focus on measuring the relevant benefits for the purpose of appraisal. Thus, for the kick-starting goal, one would seek measures of increasing willingness of banks to make small business loans autonomously.

It seems unlikely, though, that the contribution of a credit guarantee scheme to the long-term externalities-related goals could be reliably measured in any relevant operational time-frame. Only after several years would the effects of such externalities be visible, and even then, the mechanisms whereby success was achieved would be hard to prove. Instead, appraisal here would be better focused on intermediate outcomes such as the number and volume of additional loans going to the (hopefully clearly defined) target group, and the response of those beneficiaries in terms of investment, productivity, etc. Importantly, in this case, even additionality in loans would not be counted as a benefit if it went to recipients other than the defined target group.

Some of the studies mentioned move in this direction. For example, Nitani and Riding (2005) adduce some evidence that Japanese schemes have emphasized rescue situations rather than start-up or expansion situations. This would be clear evidence that neither of the strategic goals mentioned above was actually being furthered by the policy in practice.

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A clear picture of the results sought by the schemes would also help implementing agencies adapt design features in a way more precisely conducive to achieving these results.

6. **Operational design**

The operating expenses and underwriting experience of a credit guarantee scheme depends on the design of the scheme (as well as on the effectiveness of its administration). These will also affect what the scheme can achieve in terms of affecting the availability of credit and any other goals of the scheme.

The operational dimensions are too numerous to review comprehensively, from the speed and reliability with which claims on the scheme are settled (Meyer and Nagarajan, 1996 report on schemes which paid only a few cents in the dollar on claims submitted by intermediaries) to pricing (systematic underpricing clearly adds to the fiscal cost of any such scheme).[23]

Three other design dimensions are worth commenting on: should the guarantor do any credit appraisal; what proportion of guarantee should be offered; and what should the lending criteria be in terms of sector, etc?

First: the question of whether the guarantee scheme should carry out its own *credit appraisal* of each final borrower who is being guaranteed. Some of the best-regarded schemes do not carry out such retail assessments, instead relying on an assessment of the intermediary whose portfolio of loans is being guaranteed.[24] For instance, more than half of the guarantees (by value) provided by the US SBA are to preferred lenders who have authority to make guaranteed loans without prior approval of the SBA. Likewise Chile's FOGAPE does not carry out prior credit appraisals of the final borrowers. In these cases, of course, the borrowers must comply with the eligibility criteria, but this compliance is evaluated ex post, at which point delinquent

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[23] Beck et al. (2008) present a typology of 76 partial credit guarantee schemes in 46 countries.

[24] A third form is the wholesale guarantee of, for example, a bond issue by a specialized SME lender, a securitization of the underlying loans, or a block loan to a specialized lender by another intermediary. The Italian small loan guarantee scheme provides counter-guarantees on a wholesale basis to mutual guarantee associations for bank loans of their members. Accion International has had many years experience on a cross-country basis in wholesale guarantees of facilities provided to its local affiliates.

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lenders may be penalized. Cost is certainly a consideration here: by the late 1990s, operating costs of the Korea Credit Guarantee Corporation, which does carry out retail appraisals itself, equaled 7.7 per cent of the sums guaranteed; much lower operating costs can be achieved if retail assessment is avoided. Evidently a relevant factor is whether the guarantor has an information advantage for retail appraisal; if not, the second pair of eyes which it brings to bear is unlikely to be cost effective. The lender's temptation to assign the worst eligible risks in its portfolio for guarantee can be mitigated by penalizing lenders with high claims by imposing higher future premium payments.

As to the *rate of guarantee*, this refers to the proportion of the total loan which is guaranteed (and related aspects such as whether the losses are shared proportionately between lender and guarantor, or if the guarantor covers the first or last portions). Many practitioners argue that the lender should retain a significant part of the risk (no less than 20 per cent, and preferably 30-40 per cent, according to Levitzky, 1997 and Green, 2003), so that there will be an incentive to conduct credit appraisal. In practice, most schemes offer slightly higher rates of guarantee – 70 to 80 per cent being about the norm – and up to 85 per cent in the case of the SBA and 100 per cent in some other cases (for example, Japan). On the other hand, guarantee rates significantly less than 50 per cent fail to attract lenders. The Italian state small loan guarantee scheme differentiates guarantee rates according to assessed risk of each loan. Scaling guarantee rates according to the claims experience from each lender can improve lender incentives without the adverse distributional impact that would result from requiring final borrower guarantees. Interestingly, Chile's FOGAPE has started to auction available guarantee amounts with the lenders bidding on the rate of guarantee.[25] Bankers who bid for lower guarantee rates than the maximum allowable have their requests filled; others are rationed. In practice, the auctions have resulted in between 20 and 30 per cent of the risk retained by the primary lender (Benavente et al. 2006; Bennett et al., 2005).

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[25] This can be seen as an application of the increasingly fashionable idea of auctioning a block of subsidy funds to the highest bidder. In finance, the risk that the beneficiary will ultimately default, thereby eventually paying much less than she promised, makes auctioning of rather limited application. It can work in the case at hand, where the block of funds and the subsidy involved is only a small part of the bidder's business.

There is a wide variation in the nature of the *lending criteria*, for example the categories of eligible borrower and the terms of the lending. Some schemes have relatively broad eligibility rules (e.g. a ceiling on borrower size by turnover and a ceiling on the guarantee fund's overall exposure to the borrower). On the other hand, the US SBA has an additionality criterion according to which the lender must attest "to the borrower's demonstrated need for credit by determining that the desired credit is unavailable to the borrower on reasonable terms and conditions from nonfederal sources without SBA assistance." Other schemes attempt to achieve even more complex goals by defining eligibility more narrowly, with the disadvantage that it is less likely they can be enforced through transparent procedures.[26] And the more complex the criteria, the more likely opaque political interference with the granting of guarantees. On the other hand, a broad criterion leaves the door open to deadweight loss in the allocation of subsidy to borrowers that had no need of it. Restrictions on the lending terms, for example imposing interest ceilings, seek to limit the degree to which the lenders in an uncompetitive market capture rent from the scheme, but if set at unrealistic levels they can open the door to corrupt side-payments. In practice the trend has been to move towards less complicated eligibility criteria over time. For instance, the Korean scheme originally operated with a restrictive positive list of eligible economic sectors until it shifted to a negative list criterion in 1995 and subsequently removed sector restrictions in 1998.

Although some countries have had very extensive credit guarantee schemes, with the stock of guarantees in both Japan and Korea exceeding 7 per cent of GDP in 2001, and still in excess of 5 per cent of GDP at the time of writing,[27] schemes in most countries have typically covered only a small fraction of total SME lending with guarantees amounting to a fraction of one per cent of GDP. Sometimes this is due to capacity constraints (as in the Chilean scheme which covers only about one-sixth of micro, small and medium-sized enterprise lending). In other cases it is attributable to lack of demand, which in turn can be traced to such features as excessive procedural

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[26] The US government auditor found the SBA's procedures for verifying the additionality criterion to be too broad for an adequate assessment of lending decisions (GAO, 2003).

[27] Chinese guarantee funds, not all of which are publicly-backed – some resulting from regulatory arbitrage – were estimated to cover loans amounting to between 2.6 per cent of GDP in 2005 (Shim, 2006).

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costs, lack of lender confidence and/or delays in paying claims or narrow eligibility criteria.

The lessons of operational experience suggest that government-sponsored credit guarantee schemes have most to show for their efforts where they have effectively and credibly delivered an attractive package of services to lenders, with a view to enhancing their capacity to lend to the underserved sector thereby propelling them to a sustainably higher level of lending. Innovative pricing can induce improved results (for example, better loan appraisal by lenders); and – even without subsidy – demand from lenders may be high where the scheme operator can add value, for example by disseminating industry information of SME loan performance. The recent relaunch of FOGAPE along these lines may also owe something to the fact that it coincided with an increased interest of bankers in the SME sector, and with a competitive banking system in which relatively small operators new to SME lending had much to gain from the risk pooling and access to industry information offered by the guarantor.

If this interpretation is correct, we may expect to see more and more schemes moving to broad eligibility and other criteria, reduced subsidies and more use of the portfolio and wholesaling approach in preference to case-by-case evaluation by the guarantor of retail loans.

7. **Concluding remarks: good practice for credit guarantee schemes**

Credit guarantees have a natural place in the market and, where they are not sufficiently forthcoming, there may be scope for well-designed government-sponsored schemes as part of a welfare-improving policy of government intervention to improve the performance of financial intermediation with respect to SMEs. Such schemes will, however, never substitute for reform of the underlying institutional requirements of an effective credit system.

The best schemes can probably survive and add value even without ongoing government subsidies, especially if carefully targeted on SME entrepreneurs currently excluded from credit for lack of collateral, and designed to provide dynamic

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incentives for market-based lenders to acquire skills in efficient and reliable appraisal of under-collateralized SME borrowers.

But given the chequered record of such schemes in the advanced economies – and this is true of many other types of direct government intervention in the financial market – it is not just a question of avoiding unthinking transplantation of success stories; it is more a matter of pausing to consider whether, if success is unlikely in a favorable governance and general institutional environment, how likely is an adaptation to work in the more difficult environment of the developing world?

Indeed, there is a clear danger that guarantee schemes are introduced because of their political attractions rather than because of likely welfare improvements. Experience shows that schemes can be quite costly, and these costs not widely known. The benefits too are often vague and little studied. Scheme design has varied widely and few schemes build in promising and readily available incentive structures.

To overcome the hazards of short-termist policy, some simple good practice standards can be proposed. Thus, those introducing a loan guarantee scheme should ensure (i) clearly defined precise and coherent welfare improvement goals; (ii) a reliable and realistic approach to accounting so that costs can become clear early; (iii) built-in data collection that allows prompt evaluation of outcomes; (iv) attention to scheme design that maximizes the chance of successful goal achievement, limits the extent of the guaranteed loans as a percentage of total credit and places an affordable ceiling on total budgetary exposure; (v) transparency in operation and reporting: let daylight shine in!

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