

KEY POINTS

- Credit Guarantee Schemes (CGSs) are among the most successful, easily replicable, and market-friendly interventions to ease and broaden access to finance for excluded borrowers, with success stories in Japan, Malaysia, and the Republic of Korea. These schemes have existed since the beginning of the 20th century and are now present in almost every country.
- The advantages of CGSs include (i) the leverage effect, (ii) regulatory capital relief, and (iii) countercyclical relief during crises. The higher the leverage ratio, the more CGSs can mobilize loans. In times of crises, CGSs are typically the first to respond and play a crucial countercyclical role by supporting SMEs even as uncertainty raises risk aversion among lenders.
- When there is a crisis, policy makers grapple with balancing the accuracy of their policy measures with the speed of reaching the target group, and in the process many spurious actors may take undue benefits from policy support. As such, this calls for closer exploration of the safeguards adopted during crises to mitigate the most common risks of CGS—moral hazard and adverse selection.

Policies to Optimize the Performance of Credit Guarantee Schemes During Financial Crises

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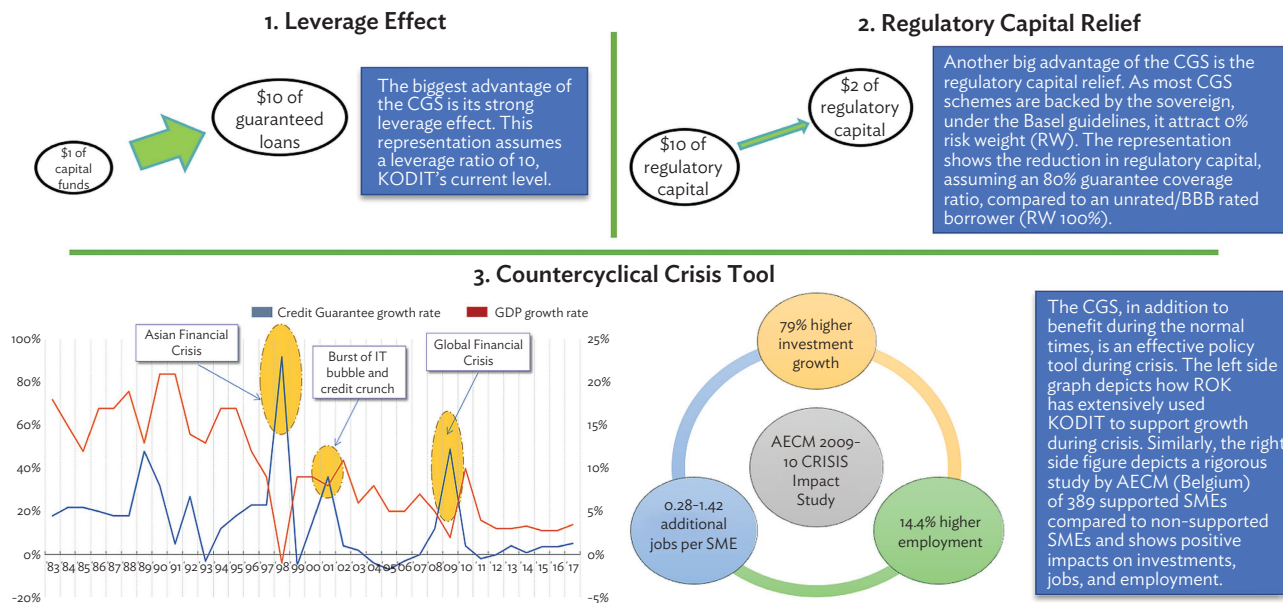
INTRODUCTION

The Credit Guarantee Schemes (CGSs) are integral to credit supplementation systems in most countries. CGS is widely regarded as one of the most market-friendly interventions for creating long-term public goods and improving the structural framework of a country. These schemes, around the world, have been pivotal in facilitating access to finance for small and medium-sized enterprises (SMEs), and ample, credible evidence points to their advantages in adding financial and economic value. CGS has also played a significant countercyclical role during multiple crises and strongly supported SMEs in such testing times.

BENEFITS OF CREDIT GUARANTEE SCHEMES

CGS improves the credit access and financial strength of SMEs, providing three major advantages: (i) leverage; (ii) regulatory capital relief; and (iii) a countercyclical crises tool. The biggest advantage of these credit schemes is that they allow investors (usually governments) to guarantee loans multiple times bigger than CGS capital funds. The higher the leverage ratio, the more loans CGS mobilize.

Figure 1: Benefits of Credit Guarantee Schemes



CGS = credit guarantee scheme, KODIT = Korea Credit Guarantee Fund, ROK = Republic of Korea, AECM = European Association of Guarantee Institutions.
Source: Authors' compilation.

Another major advantage is regulatory capital relief. Under the Basel framework, loans guaranteed by the sovereign may receive a 0% risk weight. As most CGSs are backed by government guarantees, they are eligible to receive 0% risk weight for the guaranteed portion of the loan. This substantially reduces the regulatory capital cost to the lenders.

Finally, during crises such as the 1997 Asian financial crises, the 2008 global financial crises, or the coronavirus disease [COVID-19] pandemic CGS is often first to respond and plays a key countercyclical role by supporting SMEs even as uncertainty raises risk aversion among lenders. Figure 1 summarizes CGS benefits.

SETTING UP AND OPERATIONALIZING CREDIT GUARANTEE SCHEMES

The performance of a CGS in an individual country depends upon how it is set up and run. Schemes have been successful in countries such as Japan, Republic of Korea, and Malaysia, but schemes in some other countries in Asia are regarded as unsuccessful. It is therefore critical to adopt best practice. Likewise, policy makers should be aware that CGS must operate within the existing, and unique, financial environment of a country, not as a cure-all for everything that hinders credit intermediation channels. This insight

translates into two actions. First, a country's policy makers should recognize and outline the challenges that a given CGS can solve and, second, decide on which of these challenges to focus on and how best to achieve them sustainably.

There are broadly two steps in setting up CGS. The first is an initial assessment to identify the purpose and optimal organizational setup. The second identifies finer details and principles to be followed. The first step is vital for the sustainability of CGS, requiring a high level of expert judgments and insights.

First Step—Initial Assessment

As noted, this assessment outlines the steps for identifying the two most important things in a CGS setup: purpose and organizational structure.

Identification of Purpose The first and most critical step in deciding whether to set up a CGS is the need to identify its exact economic role. For this, the stepwise flowchart must be followed (Table 1).

Organizational setup After identifying underlying need, CGS organizational structure is critical. This can be public, private (mutual guarantee schemes), public-private partnership, or international organization. The decision on what model to adopt can be based on the socio-political situation, government preferences, and government capacity constraints. Tables 1 and 2

Table 1: Identifying the Credit Guarantee Scheme Purpose

Step 1	Analyze access to finance issues: “360° assessment” using industry and institutional resources to identify SMEs access to finance issues such as higher interest rates, higher rejection rates, demand for collateral, and other issues.
Step 2	Analyze underlying causes: The outcome of step 1 must be analyzed to clearly identify core underlying issues. For example, higher interest rates could be due to a higher risk-weight for SME exposures, difficulty in credit assessment, or ineffective bankruptcy procedures.
Step 3	Analyze overlap of functions: Assess whether the existing institutions/mechanisms have addressed, or have ineffectively addressed, the issues identified in step 2. If ineffectively addressed, reforming existing mechanisms may be considered. In all other cases, the issues may possibly be targeted with the help of a CGS.
Step 4	Analyze institutional market failure issues: This step looks at market failure that requires intervention. A CGS should only target issues for which it can offer suitable, long-term, and optimal solutions. A CGS should not be a permanent solution to issues that can be solved better with mechanisms such as a movable collateral registry or a functional insolvency framework.

Source: Authors’ compilation.

capture the role and involvement of different stakeholders (more ticks mean more involvement/influence), outline the merits and demerits of each type and recommend when to prefer them.

Second step—recommendations for operationalizing a credit guarantee scheme

The following principles are critical for sustainable and efficient CGS functioning.

Legal and regulatory setup The organizational setup of CGS must be robustly and unambiguously backed up by a legal act. The contours of the act can be different depending upon the type of CGS, i.e., public, private, public–private partnership, or international organization. When public sector participation is less envisaged, the act should ideally focus on deregulating operational aspects and emphasizing key governance and regulatory and supervisory issues.

Objective: The act should clearly outline CGS objectives. This could include its intent to target only SMEs, or all firms, to focus on certain sectors, or on geographic regions, etc.

Capital contribution: The act should specify the scope and eligibility of capital contributions of different parties in setting up CGS. While government is the most common anchor among capital shareholders in most schemes, other institutions, such as the central bank, (Malaysia) and financial institutions (Republic of Korea) can become shareholders in CGS.

Ongoing capital contributions: These are systemic capital contributions to the fund. In the interest of financial sustainability and outreach expansion, the act should somehow envisage the ongoing contribution of its shareholders. In the Republic of Korea, a good example is where financial institutions contribute a fixed percentage every year, not exceeding 0.3% of their outstanding loans. It is important to emphasize that such measures should not coerce shareholders but should operate through consensus.

Leverage ratio: This is principally defined as a ratio of the potential liabilities of the fund to the equity of the fund. It is critical in the risk management and financial sustainability of

Table 2: Types of Credit Guarantee Schemes

CGS Model	Government	Financial Sector	Business Industry	International Agencies	Example
Public guarantee schemes	✓✓✓	✓✓	✓	Not applicable	JFG (Japan), CGFM (Mongolia)
MGS	✓	✓✓	✓✓✓	Not applicable	Confidi (Italy)
PPP schemes	✓✓	✓✓✓	✓✓✓	Not applicable	KODIT (Korea), CGC Berhad (Malaysia)
International schemes	✓✓	✓	✓	✓✓✓	USAID’s Loan Portfolio Guarantee Scheme

CGS = credit guarantee scheme, CGFM = Credit Guarantee Fund of Mongolia, JFG = Japan Federation of Credit Guarantee Corporations, KODIT = Korea Credit Guarantee Fund, MGS = mutual guarantee scheme, PPP = public–private partnership, USAID = United States Agency for International Development.

Source: Authors’ compilation.

Table 3: Choosing the Organizational Setup of Credit Guarantee Schemes

Type of CGS	Merits	Demerits	Ideally When to Prefer
Public	Reputational trust, leverage, synergy in work with data and other government departments	Political influence, governance issues	Strong public sector culture, CGS is dependent upon regular budget grants, supervisory capacity is limited
Private (mutual guarantee schemes [MGS])	Skin in the game for small and medium-sized enterprises (SMEs), better risk assessment	Rise of fraudulent mutual guarantee schemes where judicial system is weak, potential regulatory disadvantages	SMEs and private culture are strong, industry has demonstrated strong growth-reliant culture instead of engaging in “rent-seeking” activities. Expertise in the public sector is lacking
Public-private partnership (PPP)	Better corporate governance, diversified source of funding, private sector expertise	Prone to rent-seeking activities	Demonstrated history of successful PPP initiatives, need to obtain a stable source of funding in addition to government. The participation of the private sector is strongly desirable due to reasons such as capital contribution, expertise, etc.
International organizations	International expertise, good corporate governance practices	High administrative costs, limited penetration in the existing financial ecosystem	In a socio-politically troubled state or if the country has a history of running a failed credit guarantee program and wants to reorient by running a credit guarantee program with the help of an international organization, such as the Asian Development Bank

Source: Authors' compilation.

CGS. For example, the Korea Credit Guarantee Fund (KODIT) and the Japan Federation of Credit Guarantee Corporations (JFG) stipulate leverage ratios for their credit guarantee funds. KODIT has a leverage ratio of 10 (threshold 20) and JFG of 2.7 (threshold 6).

Safety measures: As trust in CGS sustainability is critical for optimal functionality, it may be preferable that the legal act also envisages broad key actions if the leverage ratio is under threat/breach. Recommended measures that may be taken include capital contribution calls to shareholders, extra-budgetary injections from government, or operational restructuring, etc.

Regulatory and supervisory: The act must specify the regulatory and supervisory authority. For instance, in Japan, credit guarantee corporations are supervised by the Financial Services Agency. For countries with a more vibrant credit guarantee environment with a larger number of public and private entities (like the People's Republic of China), the regulation should stipulate the prudential requirements, frequency, and criterion for detailed inspection by the supervisory agency. The frequency of the supervision should be clearly outlined. The supervisory agency should also stipulate the broad corrective steps if CGS is not functioning well to expectations.

Board composition: The act must stipulate the size, composition, tenure, and removal process for all board members, including the chair. The act should strive to achieve adequate professional expertise in running CGS and not limit itself significantly to *ex-officio* recommendations. Financial institution (and private sector) participation is desirable and it is preferable that the board should include representatives with extensive risk management expertise.

Corporate governance

Objective: The articles of association of CGS must clearly specify the activities that it will undertake—for example, providing credit guarantees, financial and non-financial advisory services, credit insurance, and reinsurance services.

Independent directors: The board must include independent directors to bring in additional expertise and improve the governance of the board.

Minority shareholders rights: Where there are private minority shareholders, CGS must devise a mechanism to protect rights and to respectfully reflect their views in CGS.

Risk management framework: The board must own the final accountability for a robust CGS risk management framework and it is recommended that a risk committee of the board be constituted to oversee the development and implementation of this framework. The committee may directly report to the chief executive officer/chair of the fund.

Validation framework: This framework will assess the risk management techniques and models used and will present to the board an independent opinion on its efficacy and avenues of improvement. To ensure no interference, the independence of staff engaged in risk management and validation activities must be ensured through careful design of pay structure and reporting lines.

Communication to the board: Communication to the board, especially risk management and audit-related, must be in lucid language so board members with basic functional understanding of risk management techniques can study and guide policies.

Services offered

The services offered by CGS will depend heavily on the needs assessment (Table 1), as earlier recommended.

Eligible firms: CGS should clearly define the criteria for SMEs that will be eligible to receive support under it. A new CGS may begin by targeting firms that have easier availability of data so that they may build their risk pricing and management system and grow with time.

Credit guarantee: Providing a credit guarantee is the core function of CGS and the mode to extend it should be based on the assessment of such as industry and institutional resources. In some countries, while the credit guarantee is extended based on SMEs meeting certain laid-down eligibility criteria, countries with a developed CGS carry out individual credit assessment of SME borrowers while deciding to extend the credit guarantee.

Credit assessment: While in some of the countries, SMEs can directly apply with CGS (Japan, Republic of Korea, Malaysia), in others (Sri Lanka) SMEs are required only to approach the lending institution. If CGS does the credit evaluation as well, there are multiple long-term benefits, such as the development of credit repository, better risk assessment, an additional layer of comfort for lenders, reduced adverse selection issues, and targeted and efficient advisory services. The Credit Risk Database in Japan is a great example of success. Malaysia and the Republic of Korea have also successfully adopted this model.

Credit insurance: In addition to credit guarantees, CGS may extend credit insurance services, taking some of the following two forms:

- **Trade Credit Insurance:** Credit insurance services can be extended directly to SMEs, such as in Sri Lanka, where CGS insures SMEs against the default risk of SMEs' business counterparts, especially protecting exports to other countries. This product, also called Trade Credit Insurance, is recommended in countries where SMEs have a significant share in exports, because SMEs are not well equipped to mitigate risks associated with exports such as political risk and non-payment risk of their buyers abroad. Such insurance may also be valuable to prevent the chain of bankruptcies in SMEs locally or internationally. Large-scale Trade Credit Insurance requires a sophisticated business and credit management operation to be sustainable, widely developed and provided by specialized trade credit insurance providers.
- **Loan Portfolio (Re-)Insurance:** CGS can include the insurance of institutions providing credit guarantee services. Such protection is known as re-insurance or "re-guarantees", which can effectively be provided by specialized private

sector credit insurance companies. This reinforces market trust in the solvency of Credit Guarantee Companies and improves the efficiency and sustainability of these credit guarantee schemes. This may be optimal in countries with mutual guarantee schemes including private players. It also is provided by regional credit guarantee corporations such as the Japan Finance Corporation. In Singapore, the government took an innovative approach building on the loan portfolio insurance form. Through the Singapore's Loan Insurance Scheme (LIS), SMEs can secure short-term trade financing loans from Participating Financial Institutions. The loans are insured by commercial insurers. By the LIS, some portion of the insurance premium was supported by the government, which was raised from 50% to 80% in the aftermath of the 2020 pandemic.

Credit infrastructure services: In addition to direct services, CGS can be important for improving the credit infrastructure services for SMEs (Box 1). SMEs also suffer due to a lack of enabling credit infrastructure services, but CGS can mitigate some of them. The infrastructure provided can be as follows:

- **Credit database:** CGS is a good candidate to develop a credit database due to its strong central position in the financial ecosystem and the rich data it is expected to possess on SMEs. A successful example of this model is the Credit Bureau Malaysia, which started as an SME credit bureau and even today is a subsidiary of CGC Berhad Malaysia. The Credit Risk Database in Japan is another successful example. The Credit Risk Database not only provides robust credit assessment of SMEs, but banks also use it to identify the growth potential of SMEs and validate their internal rating-based model under Basel II. The latter point is extremely important, as one of the most common challenges in implementing the internal rating-based model approaches for SMEs is data scarcity. This will be helpful for SMEs as risk weights under the internal rating-based model approaches of the Basel framework tend to be less than the risk weights of the external credit rating done by credit rating agencies.
- **Factoring:** The timeliness of cash flows is critical for SMEs. In developing economies, SMEs usually get little to no credit when buying and receive payment very late after selling their products and services. This gap in selling and being paid causes them significant stress. As SMEs often deal with large firms, usually with better credit standing, "factoring" SMEs receivables will enable them to realize their receivables sooner and on better credit terms (as factoring rates are dependent on the large firm credit standing).¹ CGS may promote the factoring platform acting as an intermediary between lending institutions, SMEs, and large firms. Delay in payments by large firms may affect their credit standing,

¹ Factoring is a type of supplier financing in which firms sell their credit-worthy accounts receivable at a discount (equal to interest plus service fees) and receive

Box 1: New Generation Credit Guarantee Schemes: Leveraging Technology and Intangibles Such as Patents and Other Intellectual Property Rights

Small and medium-sized enterprises (SMEs) do not possess the information and collateral traditionally deemed worthy for credit assessment or for obtaining credit, complicating both processes. CGS has tried to bridge this gap by extending credit guarantees, but it can also improve by developing modern credit assessment infrastructure to assess the modern assets that SMEs typically possess, such as technology, patents, royalties, business rights, and so on. These factors will not only enable SMEs to escape the clutches of traditional credit assessment and benefit CGS risk management, but it will also help countries become leaders among modern economies characterized by higher technology and intellectual property rights.

For example, the KIBO Technology Rating System (KTRS) by KOTEC (Republic of Korea) was developed in 2005 to promote viable technological ventures without a sufficient past financial track record. KOTEC targeted companies include ventures with high growth and technological potential. KTRS uses 33 evaluation criteria broadly falling into four categories: management capability, technological excellence, market potential, and commercialization. The rating system generates two rating grades: technology business-grade and risk grade. The former denotes success potential and the latter the default risk. A final weighted rating is assigned between AAA and D grade based on which guarantee is extended and what SME is able to obtain finance. The KTRS system has received worldwide recognition and praise from

Source: Authors' compilation.

international organizations, while partner institutions in the European Union, Thailand, Viet Nam, and Peru have co-developed similar technology rating systems.

Similarly, in Malaysia, the intellectual property financing scheme was introduced in 2013 in which applicants—most from the information and telecommunication sector—are extended financing based on their intellectual property rights and enjoy a 50% government guarantee administered by CGC Berhad. In the People's Republic of China, meanwhile, the intellectual property pledge financing market hit about \$25 billion in 2020, and the intellectual property office of Singapore in 2014 launched an “IP financing scheme” to support local SMEs to use their intellectual property as collateral for bank loans.

The success of these multiple initiatives in Asian countries shows the strong potential for modern approaches in addressing the challenges of SME financing. As long as valuation and, by extension, markets for these assets are perceived as an art rather than well-developed scientific analysis, lenders and investors will be wary of such investments. The Credit guarantee schemes, with their unique features, must be developed with supporting assessment infrastructure for such intangible cutting-edge assets.

which could affect their other lending relationships, hence, incentivizing them to make timely payments. Though this aspect is not fully developed, current example includes Garantiqa Hitelgarancia Zrt (Hungary).²

Advisory services: The ultimate objective of CGS is to increase SME access to finance. While the constraints of lending institutions can be solved through financial products and interventions, as earlier discussed, SMEs also face challenges due to financial and business roadblocks. Financial roadblocks include quality and timeliness of finance and understanding of financial disciplinary and other financial literacy issues. Business roadblocks include the need for guidance to improve corporate governance, business logistics, tapping new markets, and exports. CGSs in Japan, the Republic of Korea, and Malaysia provide advisory services to address these issues and help SMEs improve if they are unable to secure credit from a lender in the first instance. Such services not only help SMEs grow and contribute to a nation's growth, but also deeply strengthen the SME ecosystem and reduce risk for lenders and CGS in the long run.

Claims payouts: The credibility of CGS is crucial, and professionalism in the claim payouts is critical. CGS must have a clear policy to make the payment as soon as possible after the

claim is made. While the recommended timeframe is 7–14 days, the payout should not take more than 30 days. Also, while the claims filing process will have certain prerequisites, it should not be so complex as to discourage lenders from applying or lead to high rejection by CGS. In Sri Lanka, the credit guarantee program faced a challenge of demanding claims requirements and high rejection ratios, which disincentivized financial institutions from taking part in the scheme.

Risk management

In a CGS, risk management is arguably the most important function. It must strike a fine balance between the long-term viability of CGS while benefitting the maximum number of SMEs. While too-stringent risk practices may ensure solvency, it will lead to failure in achieving the prime purpose—helping SMEs. Usually, the choices that reduce the risk for CGS may hurt efforts to reach SMEs. Considerations for making these choices are discussed as follows.

Coverage ratio: The coverage ratio is the portion of the exposure on SMEs that CGS guarantees to pay financial institutions when those SMEs are unable to pay. The consideration of coverage ratio is important, especially in Asian developing countries, where

² Garantiqa Hitelgarancia Zrt. is a guarantee institution in Hungary. It expanded its operations in 2006 by providing guarantees to support the access of SMEs to factoring and financial leasing services.

lenders are wary of extending credit to SMEs and thus demand high collateral. A higher coverage ratio will incentivize lenders to lend to SMEs. However, the ratio should not be set too high (close to 90%–100%), to ensure lenders have some “skin in the game” and thus an incentive to conduct proper due diligence and credit appraisal. Typically, the coverage ratio for Asian developing countries ranges between 50%–90%. However, to support the category of firms that may need special support, additional relaxation in coverage ratios may be provided for a specially excluded subcategory of borrowers (based on sex, region, etc.). In extreme cases, a 100% coverage ratio is also provided. For example, technology firms in the Republic of Korea and micro firms in the United States receive 100% coverage ratio under guarantee schemes.

Risk sharing order: In the case of default of guaranteed loans, CGS makes payment to the lenders. There are two ways in which CGS shares the loss: on a ‘first-loss’ basis or ‘*pari-passu*’ basis. On a first-loss basis, CGS bears the loss until covered amount; on a *pari-passu* basis, CGS bears the loss on an equal pro-rata basis.

Factors to consider here are that while first-loss might be good at incentivizing lenders to lend to SMEs, it may give rise to huge moral-hazard issues on the part of lenders. Hence, it is recommended that unless special circumstances demand, a *pari-passu* basis be followed in risk sharing. Most CGS across the world follow the *pari-passu* basis in sharing the risk. Only when the coverage ratio is very low (50%–60% or less) for whatever country-specific considerations, adoption of a first-loss basis may be considered to incentivize lenders.

Leverage ratio: The credibility of CGS in the market is paramount to assure lenders. The leverage ratio plays a key role in establishing a CGS’s market credibility. As already discussed, the leverage ratio must be documented to establish credibility. Successful CGSs in Asia, such as KODIT in the Republic of Korea (latest leverage ratio of 10 versus a cap of 20) and JFG in Japan (latest leverage ratio of 2.7 versus a cap of 6) operate well within their leverage ratio caps, giving comfort to the market. Leverage ratios are typically higher in advanced countries with long-established schemes than in emerging countries. The higher leverage ratio reflects a market’s trust in CGS ability to honor claims. Hence, an older CGS or private mutual guarantee scheme (as they have better information on borrowers) may have a higher leverage ratio. It is recommended that the leverage ratio be decided based on the capital amount and may not be kept very high for a new CGS before gaining market confidence.

Financial sustainability: Financial sustainability is one of the most important and challenging issues for CGS and one of the most challenging. It measures whether CGS can cover the cost of its operating expenses and loan defaults through its cash flows. Table 4 summarizes the broad cost and revenues for CGS.

In simple terms, financial sustainability can be defined as

$$\text{Financial Sustainability} = \frac{\text{Revenue}}{\text{Costs}} \geq 1$$

Table 4: Broad Costs and Revenues for CGS

Costs	Revenue
Cost of funds	Guarantee fees
Operational costs	Returns on financial investments
Loss on guarantee	Other income (recoveries, services, etc.)

Source: Adapted from L. Deelen and K. Molenaar. 2004. Guarantee Funds for Small Enterprises. A Manual for Guarantee Fund Managers, International Labour Organization.

Cost components of CGS

- i) **Cost of funds:** This is the cost of initial capital funds and further capital that CGS may raise from the market. This cost usually has significance for private mutual guarantee schemes and does not factor in greatly for public CGS.
- **Operational costs:** This includes all administrative expenses of running a CGS, such as general expenses and infrastructure costs. For a big CGS spread across a country with significant staff, this cost is expected to be higher. The cost is usually higher for a CGS that does more retail credit assessment of SMEs.
- ii) **Loss on guarantee:** This is the payment, including the expected payment, that CGS must make on loans guaranteed to financial institutions. This depends upon the size of CGS, relative riskiness of the SMEs targeted, and risk-differentiation.

Revenue components of CGS

- i) **Guarantee fees:** This is CGS core operations income. Usually, CGS follows a two-tier pricing model charging an initial one-time guarantee fee and then an annual guarantee fee. It is recommended that the initial guarantee fee be kept higher than the annual guarantee fee to mitigate the moral hazard and quick mortality issues (borrower defaulting in less than 1 year). The guarantee fee in 11 Asian countries ranges between 0.5%–3.65% and is mainly contingent on the riskiness of the borrowers. While risk differentiated guarantee pricing is strongly recommended to ensure that better credit SMEs do not unduly suffer and subsidize riskier SMEs, a flat guarantee fee may also be adopted, depending upon the financial system. In the case of a flat guarantee fee, one way of differentiating could be that fees for different lenders are based on the default performance of guaranteed loans (i.e., financial institutions having less nonperforming loans in their guaranteed loans portfolio, will pay less in fees). The annual fee must be reasonable compared to the initial guarantee fee, usually observed to be a quarter to a half of the initial one-time guarantee fee.
- ii) **Returns on financial investments:** This is the return generated by CGS on its capital and fees income corpus. As the primary purpose of these funds is to be available if repayment need arises, they need to be invested in liquid financial instruments, where the risk is within an acceptable threshold, as decided

by the board. CGS must have a well-documented investment policy in this regard. The typical investment for this category is in government securities and high-rated corporate bonds. For an older CGS, this income is expected to be substantial, as their capital fund size is also larger. The same has been observed for older CGSs in Asia, such as KODIT (Republic of Korea) and CGC Berhad (Malaysia), where such schemes have significant investment incomes.

- iii) **Other income (recoveries, services, etc.):** Other sources of income for CGS are recoveries made on defaulted loans and earnings made from various advisory services. An increasing percentage share of recoveries income in the total income distribution is a sign of concern and CGS should pay attention accordingly. The income from services (advisory, credit bureau, etc.) is usually small, and these activities are undertaken to leverage the expertise of CGS staff and offer such services to complement the core guarantee business of CGS.

Before discussing further desired business models, Table 5 shows the income distribution of some old Asian CGSs.

Preferred revenue model

The following lessons can be inferred from the analysis of existing CGSs in Asia:

- A higher percentage of fee income shows the active nature of the guarantee business. This is also reflected in the higher leverage ratio of those CGSs.
- Investment income is proportional to capital fund and, hence, will be substantial (in amount) for older CGSs.

Table 5: Income Distribution in Established Asian Credit Guarantee Schemes

CGS	Fee Income	Investment Income	Other Income
KODIT (Korea)	67%	17%	16%
KOTEC (Korea)	80%	9%	11%
CGC Berhad (Malaysia)	39%	48%	13%

KODIT = Korea Credit Guarantee Fund, KOTEC = Korea Technology Credit Guarantee Fund, CGC = Credit Guarantee Corporation.

Source: Authors' calculations/latest company annual reports.

- iii) The role of other income is complementary and, hence, CGS should examine its business model carefully if an increasing trend is observed.

A healthy mix of fee income and investment income is desirable. A higher percentage of fee income indicates that fee income is substantial compared to investment income. In addition, if CGS has a high leverage ratio, this model is desirable because it means that CGS is generating high income through correct risk pricing of a larger number of SME exposures (KODIT and KOTEC in Table 6). On the other hand, if the proportion of investment income is very high compared to investment income, but CGS has a high leverage ratio, then it is not a desirable state because it means that CGS is not properly pricing its risk and there is sustainability risk. If CGS has a low leverage ratio, it implies that CGS is underutilizing its capital fund and should make more effort to reach out to SMEs. To summarize the earlier discussion, the following guidance is advised.

Table 6: Selecting a Funding Model

Scenarios	Share of Fee Income	Share of Investment Income	Leverage Ratio	Funding Model Recommendation*
Scenario 1	High	Low	High	Desirable; KODIT, KOTEC (Korea)
Scenario 2	High	Low	Low	Undesirable; probable case of guarantee fee overcharging
Scenario 3	Low	High	High	Highly unacceptable; probable case of under-priced risk and over-leverage
Scenario 4	Low	High	Low	Acceptable but CGS should strive to expand more; CGC (Malaysia)

CGS = credit guarantee scheme, KODIT = Korea Credit Guarantee Fund → Guarantee (No Hyphen) KOTEC = Korea Technology Credit Guarantee Fund.

Note: All the funding model recommendations are indicative and do not substitute the need for a robust risk management.

Source: Authors' compilation.

How to pursue financial sustainability

While achieving financial sustainability is very desirable and efforts should be made to achieve a ratio of 1 or higher, the pursuit should not turn self-defeating, as defined in Goodhart's law.³ In simple terms, CGS should try to achieve this target flexible rather than focusing solely on this metric. Some of the care that must be taken are as follows:

- i) There will be times when CGS needs to step up with a well-laid-out plan, but it is fine in the short term to not meet the sustainability threshold ratio of 1. Such needs could include increased lending during crises such as the Asian financial crises, the global financial crises, and COVID-19), and need to support nascent industries.
- ii) CGS should not focus on decreasing necessary costs, i.e., decreasing the denominator to improve the ratio. While efforts can be made to improve the cost of funding (if applicable) and streamline operational expenses, it is not prudent to meddle with the loss estimation techniques or cut staff expenses, as this may affect the quality and volume of operations.
- iii) CGS should not unreasonably increase guarantee fees as it may exclude needy SMEs. CGS should also not violate its investment policy in search of higher returns as it may jeopardize the capital amount, especially during crises.

A good analogy for this discussion could be the fiscal deficit target. Fiscal deficit targets are communicated by the government to indicate discipline, but it is strictly unadvisable to cut necessary spending to meet targets or to not support the economy during crises.

Performance and evaluation framework

A robust performance and evaluation framework is a strong testimony of a functioning CGS.

Disclosures and audit: CGS must adopt accounting standards that best reflect its nature of business and not the nature of the organization. It may ideally be the domestic accounting standard for private-sector enterprises. Further, CGS must conduct an annual external audit. It is recommended that external auditors be rotated regularly, as decided by the board.

Performance evaluation framework: While most CGSs usually use easy outreach metrics—such as number of SMEs reached or the amount of loans guaranteed—a rigorous performance evaluation is much more desirable. CGS, in consultation with academics and experts, should publish methodology and conduct data collection to assess outreach, additionality, and sustainability, which reinforces its existence. The internal systems should be calibrated to facilitate such data collection and CGS must clearly communicate “financial additionality and economic additionality” study results periodically. Indicators that can be studied include the impact on loan terms (interest rates, collateral requirements, and tenor) and wider economic impact (production, employment, exports, tax revenues, and others). The independence of staff engaged in performance evaluation must be ensured through careful design of pay structure, reporting lines, and other safeguards.

Table 7, intended as guidance for CGSs globally, presents brief “Dos and Don’ts” gained from observing operations and successes (and lack thereof) of CGSs. It also presents guidance for setting up and operationalizing CGS. Figure 2 presents a brief summary of recommendations.

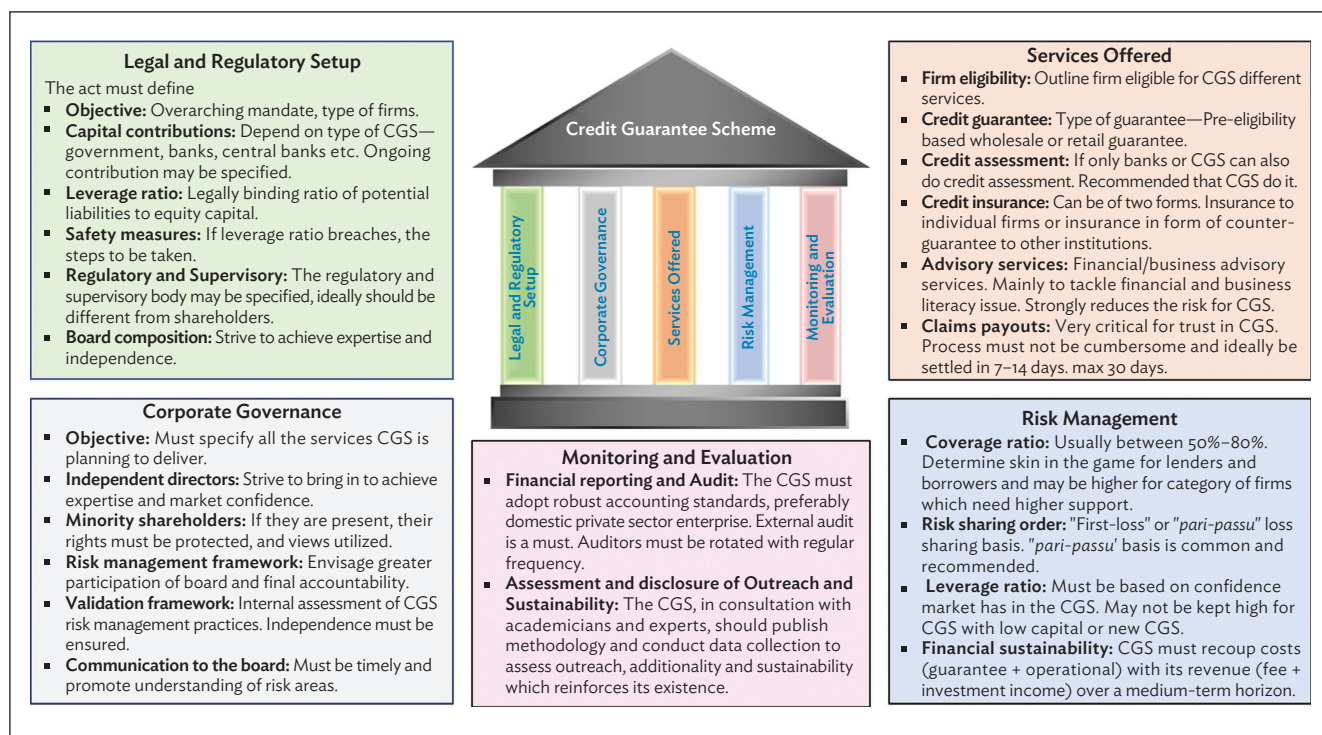
Table 7: Dos and Don’ts of Sustainable Credit Guarantee Scheme Operations

Do's	Don'ts
The legal and regulatory incorporation and status of CGS must be transparent and well-established.	CGS should not be set up to be a permanent substitute for an underlying market failure which can be solved better using other market mechanisms.
The vision, mission, and objective of CGS must be well-documented and its operations should be conducted in line with it.	The financial sustainability of CGS should not be left to be managed on an ad hoc “need-to-inject” basis.
The organizational structure including staff should be robust and it should not be run as an additional department of the government.	No complacency in risk-management should be institutionalized due to explicit/implicit sovereign guarantee.
The risk-based pricing of the guarantees must be followed and the evaluation framework must be rigorous and transparent.	The criterion for firms and financial institutions should not be overly stringent that could lead to a dysfunctional or stagnant CGS.
The participation of the financial institutions should be encouraged to the extent possible instead of making it mandatory.	

Source: Authors' compilation.

³ When a measure becomes a target, it ceases to be a good measure (Strathern, 1997).

Figure 2: Summary of Recommendations on Setting Up and Operationalizing a Credit Guarantee Scheme



CGS = credit guarantee scheme, KODIT = Korea Credit Guarantee Fund, ROK = Republic of Korea.

Source: Authors' compilation.

Leveraging CGS as a counter-cyclical tool during crises

During a crisis, financial intermediation is severely affected and SMEs are the first hit. The damage is more devastating as SMEs take years to restore their terms of financing (interest rates, collateral requirements) to pre-crisis levels. Hence, it is imperative that during crises SMEs are extended a helping hand to tide them over, with as little damage as possible. In the past, CGS actively helped mitigate the impact of crises on SMEs. During the 1997 Asian financial crises, the 2008 global financial crises, and now COVID-19, CGS has deployed various tools to help SMEs. The policy toolkit of CGS can be broadly classified into two categories: (i) one which caters to lenders addressing the heightened loss aversion tendencies in time of crises; and (ii) one that caters to damaged SME business prospects. Based on those actions, Table 8 presents the policy toolkit for use by Asian developing economies during crises and a snapshot of responses (Figure 3).

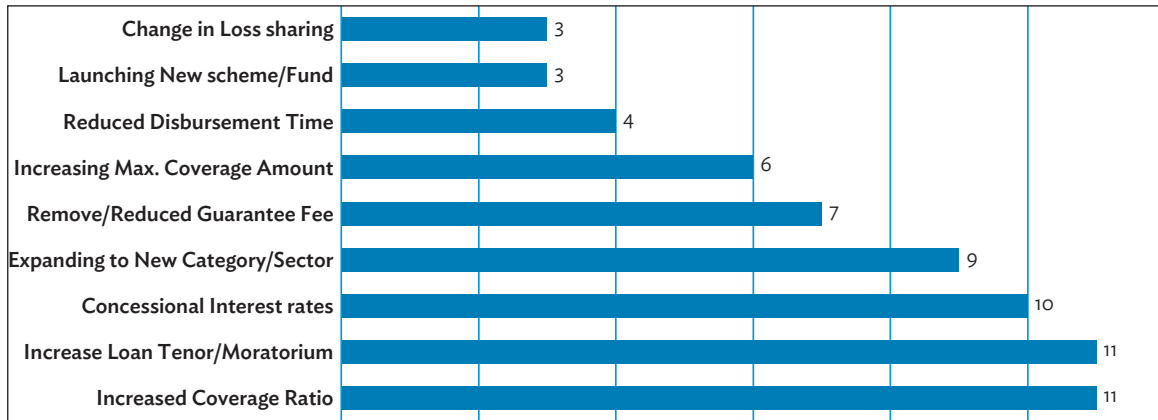
As Figure 3 shows, increasing the coverage ratio and loan tenor is the most adopted form of relief in CGS COVID-19 support

programs. As expected, concessional interest rates and expanding to a new sector are also preferred tools in a time of crises. However, during a crisis, the risk of misuse also increases, and, hence, certain safeguards also need to be adopted.

Safeguards against misuse

During a crisis, the policy response needs to swiftly cover a broad range of SMEs. To achieve this, policy makers try to balance accuracy of their policy measures and the speed of reaching the target groups, but many spurious actors end up taking undue benefits from policy support. This predicament is exacerbated, due to increased government spending, because such actors are further incentivized to take advantage of the schemes. However, CGSs in the past have adopted various safeguards to mitigate against such risk. Safeguards are divided under the theme of two of the most common risks a scheme faces: moral hazard and adverse selection (Table 9).

Figure 3: COVID-19 Response Measures Taken by the 40 Economies
(18 in Asia and the Pacific)



COVID-19 = coronavirus disease

Source: Authors' compilation.

Table 8: CGS COVID-19 Crises Policy Toolkit

To Address Systemic Loss Aversion	
Increased coverage ratio	If a lender's capital position is unstable, e.g., Hong Kong; China; Kazakhstan; Malaysia; Philippines; Republic of Korea; and Brazil; Croatia; Germany; Italy; Lithuania; Switzerland
Expanding to new firms/sector	If newly distressed sectors. e.g., Fiji; Japan; Kazakhstan; Republic of Korea; Timor-Leste; France; Peru; Spain; Turkey
Change in risk weights	If current guaranteed exposure is not risk-weighted at 0%. e.g., Philippines
Launching new scheme/fund	If there is no Credit Guarantee Scheme or better targeting is required. e.g., Cambodia; Sri Lanka; Argentina
Change in loss sharing	If lenders are wary of loss, particularly in short term. e.g. Belgium; Croatia; Greece
Relaxed assessment standards	If deteriorated position makes most of firm ineligible. e.g. Peru; United Kingdom

To Address Issues with Small and Medium-Sized Enterprises	
Increase loan tenor/moratorium	If SMEs may take time to recover or there is a "crowding-out" effect. e.g., Australia; Germany; Italy; Republic of Korea; Thailand; Brazil; Bulgaria; Latvia; Peru; South Africa
Increasing maximum coverage amount	To support firms with bigger turnover, e.g., Australia; Georgia; Japan; Malaysia; Republic of Korea; South Africa
Remove/reduced guarantee fee	Severe cashflow crunch of small and medium-sized enterprises, e.g., Finland; Italy; Philippines; United Kingdom; Croatia; Saudi Arabia
Concessional interest rates	If rates have shot up or current rates may impact short-term recovery, e.g., Azerbaijan; Hong Kong; China; Malaysia; People's Republic of China; Sri Lanka; Switzerland; Thailand; United Kingdom; Latvia
Reduced collateral requirements	If collateral typically possessed by firms suffered a huge depreciation (land, stocks, etc.) e.g., Bulgaria; United Kingdom

COVID-19 = coronavirus disease

Source: Authors' compilation.

Table 9: Safeguards Adopted by Credit Guarantee Schemes during Crises to Mitigate against Moral Hazard and Adverse Selection

Issue	Measure Adopted (example)
Moral hazard (borrowers)	<ol style="list-style-type: none"> 1. During COVID-19, in Italy firms availing the benefit are prohibited from distributing dividends. 2. During COVID-19, in Lithuania, for a higher coverage ratio, higher guarantee fees in all 6 years (90%) or a lower guarantee fee for an 80% coverage ratio. 3. During COVID-19, Finland advised different conditions for firms that had been operating for up to 3 years and firms operating for more than 3 years.
Moral hazard (lenders)	<ol style="list-style-type: none"> 1. During the global financial crises, Thailand provided 100% coverage, with the caveat that total nonperforming loans must be less than 16% of the guaranteed loans under the scheme. 2. During COVID-19, Belgium advised that the first 3% of losses would be borne entirely by lenders, losses between 3% and 5%, 50% of the losses would be borne by lenders, and 50% by the government, for losses higher than 50%, 80% of losses would be borne by government and 20% by lenders. 3. During COVID-19, in Greece, the fund loss on a financial intermediary's total portfolio is capped at 40% for SMEs and self-employed and 30% for large enterprises.
Adverse selection (buyers)	<ol style="list-style-type: none"> 1. During the global financial crises, the United Kingdom's Enterprise Finance Guarantee required borrowers to demonstrate that they had first been denied a loan outside of the program 2. During the global financial crises, to eliminate zombie or unprofitable firms, Greece made only those SMEs eligible that had been profitable over the previous three years. 3. During COVID-19, Japan stipulated that SMEs having a decline in sales of 20% or more from the previous year are eligible. 4. During COVID-19, in Croatia, the coverage ratio is 90% if losses are shared on a <i>pari-passu</i> basis or the coverage ratio is 35% if losses are shared by CGS on a "first-loss" basis.

COVID-19 = coronavirus disease

Source: Authors' compilation.

CONCLUSION

CGS has been an effective policy intervention tool in facilitating the flow of funds to the SME sector by sharing the risks associated with SME lending. This is allowing banks to extend larger loan amounts with longer tenors, charge lower interest rates, and raise their risk profiles. The success of CGS as an intervention tool can be attributed to its three unique advantages: (i) the leverage effect, (ii) regulatory capital relief, and (iii) countercyclical relief during crises.

First, the high leverage ratio of CGS—the relative size of the guarantee portfolio to the guarantee fund—indicates an efficient use of limited public funds by allowing government money to have a multiplier effect and reach more benefactors. Second, CGSs are backed by government guarantees and received 0% risk weight, substantially reducing regulatory capital costs for financial institutions. Lastly, during crises, CGSs are typically first to respond and play a crucial countercyclical role by supporting SMEs even as uncertainty raises risk aversion among lenders.

CGSs are among the most successful and easily replicable market-friendly interventions, with multiple success stories in Asia. However, CGS should not be set up as a quick cure-all for an underlying market failure that can be solved better using other market mechanisms. While CGS should be set up and operated within the existing, and unique, financial environment of a country, this policy brief provides best practices—not templates—that will help guide other countries.

The brief provides principles that should be considered while setting and operationalizing a CGS, with four elements: (i) legal and regulatory setup, (ii) corporate governance, (iii) risk management, and (iv) revenue components of CGS. Lastly, the brief presents safeguards adopted by CGSs during crises to mitigate against moral hazard and adverse selection, which are the most common risks of CGS.

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