The Role of Loan Guarantees in Alleviating Credit Constraints: Lessons for Smallholder Farmers Cooperatives

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Abstract

Credit guarantee scheme (CGS) is one of the popular instruments used to alleviate financial constraints among small entrepreneurs. However, debate abounds on whether intervening through CGSs is the best option to address this market imperfection. Empirical evidence is not only scarce, inconsistent and inconclusive. Data on credit guarantees targeting farmers' cooperatives is scarce. This article reviews the existing studies on CGS, with the purpose of explicating the role and impacts of credit guarantees and drawing lessons for farmers' cooperatives. Literature suggests that CGSs are designed and implemented in different ways in different contexts. There are also variations in the focus areas and the methodologies employed by existing studies. The studies allude to the positive contribution of CGS, in improving credit allocation for small enterprises. The paper identifies the gaps in studies on CGS as they relate to farmer co-operatives and also highlights areas for future research.

Key words: Loan guarantee, credit access, credit constraints, assessing additionality, farmers' cooperatives

Introduction

Farmers and small entrepreneurs play pivotal roles in the economies of most developing countries. Small businesses and farmers are often characterized by erratic and seasonal cash flow; they are prone to sudden and unpredictable price swings of products they use or produce (Gudger, 1998). Lack of access to appropriate financial resources and the disadvantageous loan terms and conditionalities have been cited as a major impediment to the performance, growth and development of small entrepreneurs. The main disincentives to lending to farmers and small enterpreneurs include high administrative costs of small-scale lending, asymmetric information, lack of credit history and proper financial records and lack of viable collateral (Green, 2003; Beck, Klapper and Mendoza, 2010; Tunahan and Dizkirici, 2012; Navajas, 2001; Saldana, 2010; World Bank, 1994). The World Bank (1994) reports that rural credit from the formal financial institutions is less than 10% in most Sub-Sahara African countries. Restriction in accessing institutional credit puts small enterprises at a competitive disadvantage and eventually impairs their investment, productivity, growth and development.

The major tools used to improve flow of financial resources to small enterprises include direct and special lending programs, government-funded wholesale credit, credit guarantee schemes, interest subsidy and regulative subsidies (Tunahan and Dizkirici, 2012; Saldana, 2000). Credit guarantees are the most popular measure accepted as an effective and more market-friendly tool (Tunahan and Dizkirici, 2012; Zecchini and Ventura, 2009; Kuo, Chen and Sung, 2011; Back et al, 2010). A credit guarantee[1] is ''a financial product that small entrepreneurs can take as a partial substitute for collateral; it is a commitment by a guarantor to pay to the lender all or part of the loan if the borrower defaults'' (Deelen and Molenaar, 2004: 11). Guarantees are often granted to small entrepreneurs who lack sufficient collateral or credit track records. Guarantee providers define target borrowers, loan features, often charge fees for the service and use one of the risk coverage models (Hansen et al, 2012).

[1] In the literature the expressions of credit guarantees and loan guarantees are used interchangeably (Jonson, 2009).

Although all CGSs aim at improving access of small enterprises to formal credit, there are variations in their design, mode of operation, scope and target beneficiaries.

The role, performance and impacts of CGs on SMEs and other sectors have been examined in a number of theoretical and empirical studies (Tunahan and Dizkirici, 2012; Navajas, 2001; Saldana, 2010; World Bank, 1994). Existing studies employed different approaches/tools, and attempted to assess different dimensions. Guarantee schemes that target farmers' cooperatives as well as studies focusing on CGSs in the context of farmers' cooperatives are hardly available. Through a systematic review of literature, the aim of this paper is to explore the role and impacts of credit guarantees in alleviating credit constraints among small entrepreneurs and draw lessons for smallholder farmers' cooperatives in developing countries such as Ethiopia. The paper also identifies the gaps in existing studies and suggests directions for further research.

The paper begins by discussing the methodology. This is followed by the results and discussion section which discusses the typology, design and modes of operation of CGSs; measuring the effectiveness and impacts of CGSs; role of CGs in mitigating credit constraints; criticism against CGSs; factors influencing effectiveness of CGSs; snapshot of the focus areas, methodologies and key findings of selected studies. We conclude the article by highlighting some key issues, implications and directions for future research.

Methods

The study employed systematic review approach. Our search strategy was iterative and benefited from preliminary searches of relevant materials. We carried out an exhaustive search of three electronic databases (Ebscohost, AJOL and ProQuest), and free internet search using Google scholar search engine. Combinations of search terms used include: 'credit guarantee scheme', 'loan guarantee', 'guarantee scheme', 'credit for small entrepreneurs'. In addition, visual scanning of reference lists of pertinent studies, contacting relevant experts, manual-searching of relevant journals and conference proceedings, and some grey literature were among the techniques used.

Initially over 100 studies were identified. Inclusion criteria to select studies were: the mention of the phrase 'loan/credit guarantee scheme' in the title or objectives of the study, year of publication (1990-2013) and language of publication (English). Priority was given to peer-reviewed articles. Using the above criteria, 18 peer-reviewed articles and eight Working/Technical Papers were selected. Nine other publications provided background information, modes of operation and characteristics of CGS.

Relevant information and details from each article was extracted using data extraction forms that recorded the title, authors, objectives, research method, findings and conclusions. Data synthesis involved qualitative descriptions, relating and comparing findings from different sources, collating and summarizing the extracted information. Brief summaries of the key articles are provided in the appendices section. The findings of the rest of the studies were organized according to the themes rather than reporting on results of individual studies. Although attempts were made to cover a wide-range of literature, we by no means claim that all relevant literature pertaining to the study question were exhaustively identified and reviewed.

Results and Discussions

Characteristics of credit guarantee schemes

The emergence of credit guarantee programs date back to the 19th century, and the first schemes were established in Europe in 1840s (Deelen and Molenaar, 2004). These schemes were mutual guarantee associations, whereby groups of entrepreneurs contribute their own funds to provide guarantees for each other. Green (2003) reported that there were more than 2250 CGSs in 100 countries. Donor-driven CGSs were initiated in many developing countries particularly in the 1970s and 1980 and most were unsuccessful due to the unfavourable institutional, political and economic environments. The 1990s witnessed renewed interest in credit guarantees but, most of those in Africa were supported by donors (Gudger, 1998).

Generally, loan guarantee programs involve at least three parties with different motives (Riding *et al*, 2007) - borrower, lender and guarantor. Literature documents several typologies of credit guarantee schemes across the globe, but all share some common features. Based on the assessment of the experiences of various countries, Beck *et al* (2010) and Levitsky (1997) report variations in the schemes ownership, eligibility, fees, pricing, claim procedures, risk sharing, risk assessment and funding structures.

There are also differences in the way guarantee programs are managed and administered. In some countries, lending institutions are responsible for credit decisions and for approving and administering the loans and the guarantees, while in other cases the guarantors play a vital role in evaluating each and every loan application (Riding *et al*, 2007). Beck *et al* (2010) comments that assessing and guaranteeing individual loans can reduce the risk but can involve huge costs. There are various restrictions or specialization among guarantee schemes. Most schemes are restricted whereby some are limited to small enterprises, while others are restricted to specific regions, sectors or activities (Beck *et al*, 2010).

Green (2003) identified five major types of guarantee systems based on the operators of the schemes: mutual guarantee associations, publicly operated national schemes, corporate schemes[2], schemes arising from bilateral or multilateral cooperation, and schemes operated by NGOs. Several authors discuss the different classifications of credit guarantee programs operating in different countries. The major types include: mutual programs versus non-mutual programs; closed/targeted programs versus open programs; partial guarantee program versus program with full guarantee; funded versus unfunded programs; direct guarantee versus indirect guarantee programs; guarantee based on business versus guarantee based on portfolio; and ex-ante programs versus ex-post programs[3]. Guarantee schemes have also been broadly categorised into two: – mutual guarantee program versus public or donor-funded program. Navajas (2001) notes that since the above classifications are related to different aspects, they are not mutually exclusive. Any specific guarantee fund combines features of the various typologies (Deelen and Molenaar,2004). Public guarantee schemes represent the majority in developing countries, while mutual guarantees are more widely used in high-income countries (Beck et al,2008). Analysts agree that there is no blue print or one model that always works better than others; the key issue is to identify and devise a suitable model for that particular context (Deelen and Molenaar, 2004). In designing a guarantee fund, one has to take into account the existing business landscape, the socio-cultural conditions, and the prevailing rules and regulations. Levitsky (1997) recommends that CGSs have to be adapted and changed as they experience real and changing situations and problems in dealing with lenders and borrowers.

As concerns risk sharing though there are many variations. The common practice is where the lender and guarantor each bear a fixed portion of the loan loss. There are also cases whereby the guarantor covers all of the loss up to some fixed portion of the total loan guaranteed. Each has different incentive features and costs (Honohan, 2010). Deelen and Molenaar (2004) recommend that it would be better if all the three parties involved in the scheme have something at stake as it would encourage them to exert efforts to minimize risks of default. Saadani *et al* (2010) similarly suggests that schemes should require collateral and equity up to some reasonable limits. This would help to mitigate problems of adverse selection and moral hazard. Levitsky (1997) confirms that a 100% risk coverage is subject to greater 'moral hazard' both among the lending bank and the borrowers.

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[2] Corporate associations are established, funded and operated by the private sector (Beck et al, 2010).

[3] In the case of Direct Guarantee, the donor agency acts as the guarantor and in case of default repays the agreed percentage. The client is presented for guaranteeing by a lender and the guarantor decides whether to guarantee the loan or not. In the case of Indirect Guarantee, the difference is that a third party administers the fund established by the donor agency. The final payment is debited to the fund by the third party and can take place without direct involvement of the donor. In the Individual model, each borrower is approved by the guarantor and is directly linked with a lending bank. The borrowers still have to fulfil the lender's requirements. In the Portfolio model, the guarantor does not approve single loans, but negotiates the criteria for the portfolio it is guaranteeing. All loans meeting these criteria will be automatically guaranteed by the fund. The funded and unfunded schemes classification relates to the funding of the scheme. Funded schemes can be classified as follows: The central bank is the only financier of the fund; or banks participate in the fund; or banking and non-banking institutions participate in the fund. In the case of Unfunded schemes, the government finances the guarantees and pays loan defaults. On the other hand, commercial banks administrate the fund and decide if a loan is to be guaranteed or not. Nevertheless, banks have to share part of the risk. In the case of Open schemes, a CGS is created to grant access to credit for certain target groups. Depending on the degree of specifications for the target group, a CGS could be open or targeted (closed). If there is no special requirement for the target group, the scheme is said to be open. The Targeted scheme is introduced to support a particular target group. But not every member of the target group will be automatically guaranteed. In Ex-ante schemes, the borrower presents his/her project and request to the guarantor. If the guarantor agrees to guarantee, it issues a letter of guarantee favouring the borrower. In the case of Ex-post schemes, the lender evaluates the borrower and once the loan is approved, the latter is referred to a CGS and applies to the guarantee. The Intermediary model is especially suitable for micro finance. It consists a guarantee from a bank to a non-bank micro finance institution. Then, the micro lender uses the funds to loan or finance a line of credit for micro entrepreneurs (Navajas, 2001).

Based on the experience of the Japan's CGS, Iichiro *et al* (2006) report that a 100% risk coverage had several negative effects. Among others, it reduced the incentives for borrowing firms to masquerade as an eligible firm; the loose screening criteria worsened adverse selection problems; caused moral hazard among lenders; tempted borrowers to strategically default, and resulted in the implementation of unprofitable projects by high risk firms. A number of factors dictate the level of risk coverage that the guarantee fund should absorb. Deelen and Molenaar (2004) suggest that risk sharing arrangements need to take into account the size of guarantee, loan appraisal, delivery and recovery mechanisms. A study based on the Canadian scheme (Riding and Haines, 2001) shows that small reductions in the level of guarantee could lead to substantial reductions in default rates. Deelen and Molenaar (2004) speculate that an offer of less than 50% coverage may not be attractive to lending banks.

Measuring the effectiveness and impacts of loan guarantee schemes

Though CGSs have been widely used, several authors (Kang and Heshmati, 2008) concur that evaluations of such schemes have not been granted adequate attention. The empirical evidence on the effectiveness of a CGS is both scarce and mixed (D'Ignazio and Menon, 2013). Panetta (2012) notes that these wide variations in the findings of the different studies could be attributed to differences in the structure of the schemes analysed, in the economy in which they operate and in the research methodology used. A review of existing literature shows that studies that attempted to evaluate CGSs used various methodologies and examined different aspects of CGS. Majority attempted to measure additionality or incrementality, one of the most important aspects attained as result of credit guarantee. The term ''additionality[4] refers to the additional loans made possible due to the guarantee provided to the lender'' (Levitsky, 1997: 14), or ''the amount of loan that a creditor has in its portfolio that it would have rejected were it not for the guarantee'' (Saldana, 2000: 42). This definition however emphasizes financial additionality. In short, financial additionality measures the direct effect of the intervention of the CGS on the relationship between the bank and the firm (Panetta, 2012). Authors (Green, 2003;) claim that the presence of guarantees may improve the loan conditions, which can be taken as another form of financial additionality. These include a longer repayment period, larger loan size, a less stringent collateral requirement, larger loan size, interest rate reduction, faster loan processing time, and providing loans on a more-timely basis. CGSs ultimately aim to achieve economic additionality, which refers to the improvements achieved among the borrowers and in the overall economy. These may include an increase in the commercial and economic activities of the borrowers in terms of income/profit, employment and wages for workers, sales, new products development, competitiveness, productivity, output, investment, economic growth and increase in tax revenue for the government (Green, 2003).
Thus one needs to consider the various dimensions of additionality in assessing the effectiveness of CGSs. On the one hand, Saadani *et al* (2010) suggests that the outcomes of a guarantee scheme should be assessed along three main dimensions: outreach[5], additionality, and financial sustainability. Nevertheless, though additionality is viewed as the most popular and important criterion in measuring the effects of guarantee schemes, analysts (Riding et al, 2007; Levitsky, 1997) allude to the difficulty of measuring 'additionality'. They argue that it is difficult to correctly determine how much less lending would have occurred if there were no guarantees. Problems related to definition of additionality and lack of clear objectives cause further complications. Riding and Haines (2001), however, indicate that there are instances in which loans are clearly additional. Levitsky (1997) suggests that additionality of at least 60% should be the minimum acceptable target for justifying a CGS.

Role of loan guarantees in mitigating credit constraints: *what does literature tell us?*

There is a general belief that loan guarantees can address small enterprises' credit constraints by improving both the access to credit and its terms. However, analysts (D'Ignazio and Menon, 2013; Tunahani and Dizkirici, 2012) argue that the empirical evidence on the effectiveness and real effects of credit guarantee programs is inconsistent. Studies (Mafimisebi *et al*, 2010; Craig *et al*, 2007) report positive contributions and some successes of CGSs in various countries. Well designed, well managed and implemented CGSs have boosted the small enterprise sector in many countries by enhancing their access to formal credit sources (Green, 2003).

[4] Such aspect of the guarantee program is known as 'additionality' in Europe and 'incrementality' in North America (Riding et al, 2007).
[5] Outreach refers to the scale of the guarantee scheme, as measured by the number of guarantees issued to eligible SMEs and the amount of outstanding guarantees (Saadani et al (2010).

Loan guarantee programs can be an effective means of supporting start-up, growth and survival of small enterprises, and serve as an efficient means of job creation (Riding and Haines, 2001). Guarantee schemes can also contribute to the development of human capital through training and other services (Green, 2003). CGSs can pursue social goals, such as reducing social tensions, curbing rural-urban migration (by targeting enterprises in rural areas), empowering marginalized groups or assisting post-war reconstruction.

Although banks in developing countries are over-liquid, most do not put their funds to use because of the perceived high risk of potential borrowers (Deelen and Molenaar, 2004). CGSs can help to channel this resource to the economy and be an effective instrument in changing lenders' behaviour (Levitsky, 1997; DFID, 2005;Freedman, 2004). Through learning-by-doing, guarantees help banks to learn about small entrepreneurs, the nature and challenges of their businesses, financial requirements, and to actually test that this market segment is not that risky. CGSs can inject some competition into the banking sector as participating banks can start viewing lending to small enterprises as a new profitable market segment and also minimize problems of adverse selection and moral hazard by reducing informational asymmetries between the borrowing firm and lending bank (Craig *et al*, 2009; Green, 2003). Beck *et al* (2010), however, argues that this benefit can occur if the guarantor has better information about the borrower.

Credit guarantees help to leverage substantial loan fund with limited guarantee fund. Deelen and Molenaar (2004) posit that guarantee funds do not create money; but they can act as a lever for loan fund. Leverage helps to measure the amount of loan fund allocated to borrowers because of the presence of loan guarantee, and is expressed as a ratio that is obtained by dividing the amount of loans provided by the capital of the scheme. Given the partial nature of guarantees and impossibility of defaults of all the borrowers, guarantee funds are able to offer large amount of guarantee compared to their capital (Tunahan and Dizkirici, 2012). For instance, a CGS with leverage ratio of 10 and 50% risk coverage, can provide 20 USD guarantee by its 1 USD equity. Deelen and Molenaar (2004) report that the average loss rate on guaranteed loans extended to small entrepreneurs is not more than 20%. Thus for every 100 Euro loaned, not more than 20 Euro will be lost; that means banks can safely extend loans up to 5 times the size of the guarantee fund with 100% coverage. The higher the leverage,the greater the achievement of the guarantee fund (Deelen and Molenaar, 2004). Tunahan and Dizkirici (2012), however, suggest that a healthy guarantee program has to keep its leverage ratio under a certain level; but it should not decrease the ratio to a lower level as it will restrict borrowers benefiting from guarantees.

What do critics say about loan guarantees?

There is no consensus on whether state-funded scheme is an effective instrument to promote lending to small enterprises. Green (2003) cites two reasons why critics struggle to be convinced by the justifications for publicly-funded schemes. Firstly, there is a doubt whether CGSs are a first-best option to address the credit market failures. Secondly, there are reservations about the realization of additionality and changes in financial sector as a result of CGS. Some critics (Riding *et al*, 2007), argue that credit rationing may not necessarily need interventions. Although in theory loan guarantees are presumed to reduce credit rationing, the presence of a market imperfection does not always necessitate government interventions to correct it. The selective credit allocation like that of SBA can be an inefficient and counterproductive policy tool (Craig *et al*, 2009). On the other hand, the too generous and non-selective guarantee provision programs have negative effects by impairing the development of an innovative financial sector and by inducing dependence among SMEs (Oh *et al*, 2008). The access of weak firms to loans may prevent competitive entrepreneurs from getting loans, which can result in the survival of uncompetitive firms and reduction in market share and profits of competitive ones (Ibid). Critics of the US SBA programs claim that they unfairly benefit the financial institutions that participate in guaranteed lending programs (Craig *et al*,2009). Some (Zecchini and Ventura, 2009), consider CGSs as costly instruments that pose problems of financial sustainability. These problems could be due to relatively high loan default rates, high guarantee coverage ratios, high fee levels, and administration costs. Many warn that CGs should not be taken as a substitute for correcting financial market or legal system failures that yield credit rationing.

A lack of collateral is not necessarily the decisive factor in discouraging banks from reaching out to small enterprises. Citing Colombia, Levitisky (1997) reported that transaction costs were much higher than loan losses.

Hansen *et al* (2012), however, emphasize that the stringency of collateral requirements is often a major barrier to small enterprises in accessing finance, and this appears to be more severe in Africa. Others (Posey and Reichert 2011) warn that loan guarantees may introduce a moral hazard[6] among the lending banks and borrowing firms. Levitsky (1997), however, suggests that moral hazard may not be a real problem, since banks protect their reputation for high loan-portfolio performance by avoiding loan defaults. Moreover, borrowers are also aware that failure to repay their loan would affect their credit history and future access to loan. Often banks are unable to provide additional loans without additional capital as excessive demand for loans may surpass the amount of available loan capital (Gudget, 1998). In this situation, guarantees would fail to generate additional lending.

Honohan (2010) observes that while the market can find uses for partial CGs, the attractions for public policy can be illusory; politicians can easily underestimate the true costs of guarantees. Due to lack of clarity in the goals of these schemes conducting a cost-benefit analysis becomes complicated. With many competing demands for public funds, the argument that such schemes would increase credit allocations might not be strong enough to justify the need for subsidized guarantee schemes. Despite these concerns, credit guarantees can offer genuine advantages over direct government lending and other forms of intervention (Honohan, 2010). They have low initial costs and less distortive effects on the market compared to other forms of financial interventions.

Factors influencing effectiveness of credit guarantee schemes

The effectiveness of CGSs can be influenced by a host of factors such as regulatory framework, financial situations of the lending banks, situations of the borrowing firms, scheme's own features, input and output markets. The success and efficiency of guarantee schemes largely depend on their design and how well they are implemented (Panetta, 2012). Among others, clarity of objectives or desired outcome, incentive features (for lenders), risk sharing arrangements, procedure of extending guarantee, eligibility criteria, pricing, human resources, internal reporting and control system play a critical role. Saldana (2000) suggests that for a CGS to be effective, it has to generate an economic incentive for the creditor to lend to targeted beneficiaries. In designing CGSs effort should be made to align the motives and incentives of the guarantor and the creditors. Green (2003) notes that incentives for lenders and borrowers to participate depend on the scheme's marketing efforts, distribution of risks, additional services offered, fees and other costs, credibility of the guarantor and the relations between the guarantor and the lender.

Tunahan and Dizkirici (2012) note that a serious challenge of the guarantee programs established in developing countries is convincing the banks to participate in the program. Although banks express interest in participating in a CGS, they fail to make real use of the fund (Deelen and Molenaar, 2004). This could be mainly attributed to the attitude, experience and competence of staff and financial positions of the banks. Tunahan and Dizkirici (2012) suggest that involvement of many banks whereby each one has only a few number of guaranteed loans can cause complications and increase the cost, and the recommendation is thus to include bigger banks with larger shares in the market. However, such an approach can be viewed to be biased against innovative emerging banks. Lack of financial and business management capacity among the borrowing firms can preclude access to and effective usage of finance (Hansen *et al*, 2012). Analysts (Hansen *et al*, 2012) concur on the critical importance of integrating technical assistance and capacity building services both for the borrowers and lending banks in to the guarantee program. Dalberg (Hansen *et al*, 2012) has proposed SMEs' needs framework which has profound effect on their performance. These include access to markets, finance, people and training, and enabling business environment.

Guarantee funds are not tools to solve the problems of weak entrepreneurship or poorly performing banks and these funds cannot possibly turn a bad investment into a viable. CGSs are only likely to be successful when the four Ps are all present: well-prepared entrepreneurs who present good projects to well performing banks that have professional staff to handle the process (Deelen and Molenaar, 2004). DFID (2005) identified a range of key success factors for CGS to effectively promote financial sector deepening. The factors for success and failure were categorized as macro and micro level factors, and largely related to the banking environment; monetary and regulatory environment; business environment; political and legal frameworks; approach to scheme design; lending technologies and technical assistance.

[6] Moral hazard arises when the presence of a guarantee induces reckless conduct by the guaranteed lender or borrower (Freedman, 2004).

Gaps in the selected primary studies

Most studies on CGS are based on schemes in developed countries such as USA and Canada (Riding *et al*, 2007; Graig *et al*, 2007; 2009; Posey and Reichert, 2011), European countries (Tunahani and Dizkirici, 2012; Allinson *et al*, 2013; D'Ignazio, and Menon, 2013) and Asia (Kang and Heshmati, 2008; Oh *et al*, 2008; Zhang and Ye, 2010; Kuo *et al*, 2011). A few examine schemes in Africa (Okon and Nkang, 2009; Mafimisebi *et al*, 2010; Hansen *et al*, 2012), while some (DFID, 2005; Beck et *al*, 2010; Honohan, 2010) assess global practices. Sub-Saharan Africa has not featured prominently in the existing studies. Hansen *et al* (2012) speculates that this could be due to the fact that the region is a relatively newer market for CGSs. Although Beck *et al* (2010) analysed typologies of partial CGs in 46 countries, they included only one scheme in Africa.

Various studies examined different aspects related to CGSs, but as presented in table 1, the vast majority tended to evaluate different dimensions of additionality. Some (Oh et *al*, 2008) focused on economic additionality among the borrowing firms, while others (Craig *et al*, 2007; 2009) explored the impact of the intervention on the economy. A few studies (Saldana, 2000; Tunahani and Dizkirici, 2012) assessed CGS's economic value to creditors. Only two of the studies (Okon and Nkang, 2009; Mafimisebi *et al*, 2010) analysed CGSs that explicitly targeted the agricultural sector. Some studies (Beck *et al*, 2010; Kuo *et al*, 2011) described theoretical framework, design features and operational mechanisms of guarantee schemes. Most of the studies that attempted to compare the features and performance of CGSs across the world suffer from poor data quality (Panetta, 2012).

Most studies report on the positive contributions of guarantee schemes in improving credit allocations (table 1). Others reported on ineffectiveness or failures of CGSs. Zhang and Ye (2010) reported that the CG system for SME in China did not operate efficiently and effectively. An evaluation of the CG of Turkey (Tunahani and Dizkirici, 2012) reveals that the value of Guarantee fund was low in Turkish banking regulations and banks were reluctant to use its guarantee. Its average guarantee amount was higher than EU average, default rate was higher and leverage ratio was lower compared to standards and international practices. The share of the fund in total loans and GDP was low compared to its targets and selected EU and Asian countries. The result of the assessments of guarantee schemes in Africa is not encouraging. Several programs issued few guarantees and were terminated as a result of poor performance and poor implementation that led to high costs and defaults (Gudger, 1998). They generally had little additionality and overall impact, and almost no borrowers 'graduated' to non-guaranteed lending.

Conclusions, some implications and directions for future research

In an attempt to draw lessons for farmers' cooperatives, this paper set out to answer one question: What is the role and impact of CGSs in alleviating credit constraints among small entrepreneurs. The paper also discusses some of the basic concepts and issues related to scheme design and operations, as well as shades light on areas for further investigation. This paper shows that credit guarantee is one of the tools widely used by governments and other agencies to improve small entrepreneurs' access to formal credit. Literature documents variations in scheme designs and operations across countries, which emanate from the need for adaptation to their operating environment. There is no blue print or one particular model that works best under all conditions. There is no consensus on the role and impacts of CGSs in mitigating credit constraints. Critics raise some reservations and doubts about the effectiveness and impacts of CGS, which has not been often backed by empirical evidences.

Evaluations of individual CGS are often limited in scope and few schemes have been evaluated consistently, and recommend the need for comprehensive evaluations. This is necessary both for accounting for the resources committed as well as to improve the performance of the schemes. On the other hand, most of the previous studies appear to focus on Asia and developed countries of Europe and North America. In addition, most of the studies on CGSs focused on assessing the role of the government-supported CGSs in increasing credit allocations for SMEs. The actual role of CGSs in improving demand for, access to and utilization of loans among borrowers at firm level under various contexts has not been adequately addressed. Data on CGSs targeting farmers in general and co-operatives in particular is almost non-existent. Moreover, private firms (such as SME) differ from cooperatives in their philosophy, objectives, principles, nature and location of business. There is generally an appreciable information gap with regard to the role and impacts of CGSs and factors affecting their performance in relation to farmers' cooperatives in Africa. The role of CGS in bolstering access to credit for farmer co-operatives represents a gap for further research.

Previous studies also failed to explore how credit guarantees affect the credit decisions of banks. Studies that continuously monitor and analyse how CGSs work and how these benefit both creditors and borrowers are needed. Existing studies hardly report on the processes and relationships between the lender, borrowers and guarantors, and the underlying causes for the successes or failure of the schemes. We therefore recommend that country and context specific analyses should be conducted if the effectiveness and contributions of CGS and intervening factors are to be clearly understood.

Acknowledgement

This paper is part of a larger study based on a collaborative project ‘‘Sustainable Credit Guarantee Scheme to Promote Scaling up/out of Enhanced Coffee Processing Practices (Ethiopia and Rwanda). The study is funded by the Common Fund for Commodities, with co-financing from Rabo Bank and counterpart contributions from the Government of Ethiopia.

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Annex 1.

Table 1: Focus areas, methodologies and key findings of some selected studies

Study/Author	Region/ country	Objectives	Methodology	Key findings
(Beck, Klapper and Mendoza, 2010).	Global	Global review of typologies of partial CGs.	Surveys of 76 PCG funds in 46 countries; used descriptive statistics, correlation and multivariate regression.	CGSs have varying features. Governments have role in funding and management, but limited role in risk assessment and recovery. Most CG funds restricted in terms of borrowers and areas.
Levitsky (1997)	International review	Description CGS implementation globally	International review; details of methodology were not described	Most schemes had 60-80%, a quarter had 50%, 11% had 100% coverage. Generated loan leverage of 5 to 10 times, and 30 – 35% additionality.
Green (2003)	Not country specific	Determine effectiveness and efficiency of CGSs in promoting private sector-led growth.	Analytical methodology not discussed.	Evidence of additionality among well-implemented CGSs; identified good practices that can guide scheme design & implementation
DFID (2005)	Chile, Egypt, India & Poland	Assessing contribution of CGS to financial sector	Qualitative analysis of 4 CGSs and participating banks	Financial sector deepening achieved can be partly attributed to the CGSs
Zecchini and Ventura (2009)	Italy	Evaluate impact of public CGs on credit allocations & borrowing costs	Applied econometric approach. Used fixed-effect panel data estimation & Difference-in-difference approach.	Scheme enhanced SME's access to credit, with financial additionality of 12.4%; as well as reduced borrowing costs by 16 – 20%;
Iichiro, Kojia, and Yamashiro (2006)	Japan	Examine impact of government credit programs on credit allocation and economic efficiency	Empirically tested the theoretical predictions of Makiw's (1986) adverse selection mode using panel data.	Program increased credit allocations for long-term loans. Economic efficiency improved among less risky users.
Kang and Heshmati (2008)	Republic of Korea	Exploring the impact of CG on SMEs at the firm level	Used a pseudo panel data of 200,702 loan applicants. Estimated effects of CG on SMEs in three steps – using various models.	Scheme enabled firms to achieve good performance. CG partially met goal of alleviating SMEs' credit constraints and stabilizing employment
Oh, Lee, Heshmati and Choi (2008).	Republic of Korea	Evaluating effect of CG policy by comparing guaranteed firms and matched non-guaranteed firms	Applied propensity score matching methodology. Data obtained from plant-level data of Annual Report on Mining & Manufacturing Survey	CGs influenced firms' size, sales, employment, wage levels and survival rate; did not increase R&D, investment and productivity. Firms with lower productivity obtained guarantees.

Riding and Haines (2001)	Canada	Comparing costs with benefits of the Canadian LG	Used both descriptive statistics & econometric model (that predicts the default rate as a function of the LG).	CGs ensured efficient job creation; default rates higher for newer firms, increased with the amount of funds borrowed, & varied by sector. Small reduction in the level of guarantee could lead to significant reduction in default rates
Okon and Nkang (2009)	Nigeria	macro-econometric analysis of Agricultural CGS Fund.	Modelled the volume by number & value of loans guaranteed and repaid, using vector auto-regression methodology.	Value of loans guaranteed positively related to number of loans guaranteed; aggregate and value of loans repaid, but inversely related to policy instrument.
Mafimisebi, Oguntade & Mafimisebi (2010)	Nigeria	Performance appraisal of partial CGS of the Nigerian agriculture	Used exponential growth function and multiple co-integration with a time-series data.	Found growth in paid-up share, total funds, number & value of loans guaranteed, volume & value of loans repaid, volume & value of default claims. Long-run correlation between number & volume of guaranteed loans & agri GDP.
Craig, Jackson and Thomson (2007)	USA	Assessing impact of SBA-guaranteed lending on local economic performance.	Estimated a regression model, using classic Arellano-Bond Panel regression estimation	Positive relationship between levels of SBA-guaranteed lending in local market and future per capita income growth in market.
Craig, Jackson & Thomson, (2009)	USA	Review studies on the economic impacts of SBA's guaranteed lending programs	Reviewed recent studies on the issue; details of the review methodology not provided.	Positive impact of SBA guaranteed lending programs on economic performance.
Zhang and Ye (2010)	China	Evaluating the effectiveness of the operation mode of SMEs CGS	Constructed analytical framework using CG system in Shenzhen	CG system for SMEs in China is not efficient and effective; hinders development of sector.
Tunahani and Dizkirici (2012)		Evaluating structure and performance of the CG Fund of Turkey	Evaluates Turkey's CG fund against International practice;. Methodology unclear	Ineffectiveness in acceptance among banks; default rate higher; leverage ratio lower, share of fund in total loans low
Saldana (2000)	Philippines	Analysing how a CG confers private benefits to creditors	Analysed creditor's loss function	LGs improve creditor's welfare by reducing the amount & risk of loan loss; positive economic value to risk-averse creditor

Cowling and Mitchell (2003)	UK	Testing the default specification outlined by Stiglitz and Weiss (1981).	Adopted econometric modelling of defaults - probit models and duration models	Presence of LGS raises the volume of loans, price; default increases with banks' cost of capital; between 55% and 72% of loans were repaid.
Posey and Reichert (2011)	USA	Examining the role of LGs in lines of credit granted to small businesses	Employed econometric model - two-stage instrumental variable procedures to obtain consistent parameter estimates.	LGs' negative effect both on loan size & interest rates. Under symmetric information, LGs can improve the ex-ante welfare of all household types not too generous.
Riding, Madill, and Haines (2007).	Canada	Describing a new approach to measure incrementality in the context of the Canadian LGS	Used two-stage estimation process; includes logistic regression-based model of loan outcomes (a credit-scoring model)	Higher probability of being declined for LGs to firms with younger owner; home-based; and more loan account managers. Incrementality sabout 75%.
D'Ignazio, and Menon (2013).	Italy	Evaluating effectiveness of partial CG program implemented in Italian region	Qualitative and descriptive approach	Improved financial condition of firms; increase in long-term loans; decrease in interest rates; increasing of defaults
Allinson, Robson and Stone (2013)	UK	Determining the actual economic impact of EFG for a cohort of borrowers	Descriptive statistics & cost benefit analysis, & econometric techniques were used analyse business performance	Additionality; additional economic output & employment; limitation in timeliness
Saadani, Arvai and Rocha (2010)	Middle East & North Africa region (10 countries)	Reviewing the design of partial CGSs in MENA, and assesses preliminary outcomes	Survey based on descriptive analysis	Average size of GSs in line with international average. Small guarantees but large value. CGSs financially sound; room to grow.
Hansen, Kimeria, Ndirangu, Oshry and Wendle (2012)	Ghana, Kenya, South Africa and Tanzania	Assesses credit guarantee schemes in Ghana, Kenya, South Africa and Tanzania, by investigating the entire supply chain	To distinguish schemes, used a descriptive framework with three dimensions (targets, processes & financial terms). To assess performance, used simplified logical framework - input (guarantee), output (bank utilization), outcome (borrower access) & impact (bank exposure).	Framework to assess CG features & performance. Banks concur on strategic importance of SMEs; differ in willingness to adapt approaches. CGSs complement other efforts & facilitate credit allocation, but banks and SME experts convinced that CGs are important tool for expanding lending to SMEs. Identified challenges, and key lessons for CG effectiveness.