Bank financing for SMEs – lessons from the literature

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Abstract: This paper surveys the recent literature on the relationship between SMEs, financial deepening and economic development. While a large SME sector is not associated with faster economic growth or poverty alleviation, financial deepening can have a pro-growth and pro-poor impact by disproportionally alleviating SMEs' financing constraints, enabling new entry of firms and entrepreneurs, and better resource allocation. It is important to differentiate between different segments of the SME population, most critically between subsistence micro entrepreneurs and transformational entrepreneurs. There is strong evidence that long-term institution building, including contractual and information frameworks, contribute to easing SMEs' financing constraints, with supportive evidence for specific policy interventions. There is no unambiguous evidence on the relationship between market structure and SMEs' access to finance. Foreign-owned and larger banks are as likely to cater to SMEs as smaller and local banks, but using different lending techniques and where the necessary institutional framework is in place in the country. There is also evidence that SMEs are more strongly affected by banking crises and that regulatory policies have important repercussions for SME lending.

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1. Introduction

The vast majority of firms around the world fall into the category of micro, small or medium-sized enterprises. In terms of enterprises, more than 95% fall into this category; but even in terms of employment in low and lower-middle income countries, more than 50% of employees work in companies with fewer than 100 employees (Ayyagari, Demirguc-Kunt and Maksimovic, 2011b). This seemingly justifies the statement that "SMEs are the emerging private sector in poor countries and thus form the base for private sector-led growth" (Hallberg, 2001).

Policy efforts targeted at SMEs have often been justified with arguments that (1) SMEs are an engine of innovation and growth and (2) they help reduce poverty because they are labor-intensive and thus stimulate job growth, but (3) they are constrained by institutional and market failures. Cross-country, country-level, and microeconomic studies, however, confirm only the last of these three claims, while there is at best mixed evidence on the first two.

This paper surveys the literatures (1) on the role of SMEs in economic development and the growth obstacles they face, (2) on the importance of financial development in leveling the playing field between firms of different sizes, and (3) on specific policy levers to maximize the impact of finance on SMEs. These research areas have been very active over the past ten years, partly driven by the availability of large firm-level panel datasets, both on the national as well as on the international level, and loan-level data from credit registries, but also driven by the increased use of randomized control trials (RCTs) to assess the effectiveness of specific interventions.

Given the importance of SMEs in developing countries' private sectors and the claims described above, it is not surprising that policy makers and bilateral and multilateral donors have been focusing on SME finance as a priority area for policy advice and intervention. The G20 has established a Committee on SME Finance, co-chaired by Germany and South Africa and has supported the "G20 SME Finance Challenge", a competition for innovative solutions

to overcome SMEs' financing constraints.[2] Many suggestions for financial sector reforms are tested for their impact on SMEs, including regulatory reform discussions, such as those on Basel 3. And in the context of the current crisis in Europe, there are many references to SMEs being the segment of the enterprise population suffering most.

Before proceeding, I would like to focus on two definitions. First, what are micro, small and medium-sized enterprises? The definition of such enterprises varies across countries and often even within countries across financial institutions. Criteria used to differentiate between micro, small and medium-sized, and large enterprises include employees, assets or sales/turnover.[3] Another important distinction is between formal and informal enterprises, where the latter are often seen as synonymous with micro-enterprises. Beyond specific threshold-based definitions, it is important to note that the distinction goes beyond pure size and relates to organizational, behavioral and other dimensions, along which these three groups (micro, small and medium-sized and large) differ. This also justifies why the actual definition varies across countries – what is small in the U.S. might be large in Zambia.[4] Further below, I will also make the point that it is important to distinguish between two groups of micro and small entrepreneurs – those that start business out of the lack of an attractive salaried job and transformational entrepreneurs.

Second, it is important to define SME finance and distinguish it from microfinance. The heading SME finance typically refers to financial services catered specifically to small and medium-sized enterprises. This "segment-approach" sees SMEs as one of several client segments, with other segments being "corporate", i.e. larger enterprises, and "retail". This is also consistent with the way many banks structure their organization focusing staff and procedures on specific client segments. This also implies different lending techniques,

[2] http://www.changemakers.com/en-us/SME-Finance

[3] The MSME country indicator database, maintained by the IFC defines micro-enterprises as those with fewer than 10 employees, medium-size as those with 50 to 249 employees and small enterprises with those between 10 and 49 employees. See Kushnir, Mirmulstein and Ramalho (2010) for details.

[4] See Gibson and van der Vaart (2008) for a detailed discussion of cross-country variation in SME definitions and the usefulness of different criteria. They suggest that SMEs be defined as formal enterprises with annual turnover of between 10 and 1000 times GDP per capita of a country.

product differentiation and possibly even different delivery channels for SMEs as opposed to large enterprises and retails clients. It is also important in this context to differentiate between SME finance and microfinance. Microfinance is rarely undertaken by banks, much more by NGOs or specialized microfinance banks, institutions that often have a double or triple bottom-line, emphasizing - in addition to profit - social impact and sustainable development. Critically, lending techniques differ between microfinance and SME finance, with the latter being based more on hard collateral, and business assessment and the former more on "personal collateral" and group and community pressure.

In a broader sense, SME finance refers to a set of institutions and policies that aim at leveling the playing field across enterprises of different sizes in terms of access to financial services. In this broader definition, it refers to judicial reforms, the establishment of registries, partial credit guarantees and other regulatory and tax policies that ease SMEs' access to finance.

The remainder of this survey is structured as follows. Section 2 discusses evidence on the link between SMEs, job creation and economic development and the specific role of financial deepening in alleviating SMEs' financing constraints and thus enhancing economic development. Section 3 discusses the importance of distinguishing between different sub-group among micro, small and medium-sized enterprises. Section 4 introduces the concept of the access possibilities frontier as conceptual tool to discuss different policy interventions. Section 5 discusses the evidence on specific policy dimensions, including competition and market structure, regulatory policies and the impact of the current crisis on SME finance and section 7 concludes.

2. SMEs, financial development and economic development

While there is a positive correlation between the share of small and medium enterprises in manufacturing and GDP per capita growth, there is no evidence that this relationship is causal, i.e. that having a high share of SMEs helps countries grow faster or reduce poverty at faster rates (Beck, Demirguc-Kunt and Levine, 2005). Successful economies thus have more SMEs,

but their success is not explained by having lots of SMEs. However, there is evidence that financial deepening can contribute to economic growth and ultimately poverty reduction by easing SMEs' financing constraints. Such effects are not always direct, but indirect through better resource allocation across the economy. I will discuss evidence on this below.

One channel through which SMEs are conjectured to address poverty is through job creation. Some argue that SME expansion boosts employment more than large firm growth because SMEs are more labor intensive (Birch, 1979, 1981, 1987). On the other hand, some other research finds that SMEs are neither more labor intensive, nor better at job creation than large firms (Little et al., 1987). Recent cross-country survey evidence suggests that smaller firms do not only offer most of the jobs across the world (Ayyagari, Beck and Demirguc-Kunt, 2007), but also create more jobs than larger firms (Ayyagari, Demirguc-Kunt and Maksimovic, 2011b), though it seems somewhat difficult to draw such conclusions from survey data. Specifically, cross-sectional firm-level survey data do not allow controlling for survivor bias[5] and composition effects[6] and distinguishing between net and gross job creation. In a more limited sample for five Sub-Saharan African countries with panel data, Biggs and Shah (1998) find that large firms account for the majority of job creation in four of the five countries. Page and Sonderbom (2012) find a similar job net creation by small and large firms for a long panel data series for Ethiopia. While gross job creation is larger for small firms, this effect is countered by a lower survival likelihood of small firms. Klapper and Richmond (2013) find for registered firms in Cote d'Ivoire that the probability of survival increases monotonically with firm size, while Liedholm (2001) reports for other African countries that there is no relationship between firm size at start-up and survivor probability. In summary, there is currently no robust evidence that small firms are better in net job creation than large firms. But even so, it is not clear that these jobs would directly help the poor: Using data for Bangladesh, Bauchet and Morduch (2013) find that employees of SMEs are significantly less

[5] While cross-sectional surveys allow for the distinction between gross and net job creation by surviving firms, i.e. allow for taking into account job destruction by surviving firms, job destruction due to failing firms cannot be captured.

[6] A mid-sized company being reclassified as small enterprise after retrenchment would "contribute" to growth of the small enterprise segment in such an exercise.

poor than microfinance clients (mostly micro-entrepreneurs). Overall, there is thus no hard evidence on a link from a larger SME segment to more job creation and more specifically for job creation for the poor.

While there is thus no unambiguous evidence on a positive impact of a large SME segment per se on economic development, job creation and/or poverty alleviation, cross-country research has pointed to the institutional and business environment—including well-defined property rights, both between private parties and protection against government expropriation; effective contract enforcement; competitive product, labor, and capital markets; and a legal framework that allows for relatively easy entry and exit of enterprises—as an important factor for economic development.[7] Critical in this context is the financial sector. An extensive literature has documented the pro-growth and pro-poor effect of financial deepening, especially in developing countries.[8] As I will argue in the following, this effect works to a large extent through easing SMEs' financing constraints.[9]

There is significant evidence that financial deepening can help create jobs, and there is evidence that this partly happens through expanding SME finance. On the aggregate level, Pagano and Pica (2011) show a positive and significant relationship between financial development (using a standard measure, Private Credit to GDP) and job creation in developing countries. For the U.S., Beck, Levine and Levkov (2010) show that branch deregulation and consequent financial liberalization led to decreases in unemployment and increased labor market participation especially among low-skilled workers. Gine and Townsend (2004) show for Thailand that financial liberalization has contributed to migration of subsistence agricultural workers into urban salaried jobs. In addition, there are a variety of studies showing the importance of financial development for growth of SMEs. While other

[7] See, for example, Klapper, Laeven and Rajan (2006) who show that high firm registration costs hamper new firm creation and growth, while property right protection and regulations fostering access to finance are conducive to firm creation and growth.
[8] See Levine (2005) for a literature survey and Beck (2012) for a critical post-crisis assessment of the finance and growth relationship.
[9] There is cross-country aggregate evidence that the pro-growth and pro-poor effect comes through enterprise rather than household lending by banks (Beck et al., 2012)

business environment obstacles are also important, these are often interrelated with finance, and even when these interactions are controlled for as well as they can be in a cross-country setting, access to finance seems to emerge consistently as one of the most important and robust underlying factors that constrain firm growth (Ayyagari, Demirgüç-Kunt and Maksimovic, 2008). There is evidence that financial development helps reduce the effect of financing obstacles on firm growth, with a disproportionally beneficial effect for small and medium-sized enterprises and financial development exerts a disproportionately large positive effect on the growth of industries that are naturally composed of more small firms (Beck, Demirguc-Kunt and Maksimovic, 2005; Beck et al., 2008).

Quasi-natural experimental evidence confirms the importance of credit constraints for firm growth. Analyzing detailed loan information on 253 Indian SMEs' before and after they became eligible for a directed subsidized lending program, Banerjee and Duflo (2008) find that the additional credit resulted in a proportional increase in sales rather than a substitution for other non-subsidized credit, indicating that these firms were credit constrained before receiving subsidized credit. Similarly, Zia (2008) finds that small non-listed and non-group firms in Pakistan reduce their sales after they become ineligible for subsidized export credit, indicating the existence of credit constraints; in contrast, large, listed and group firms do not reduce their sales after losing access to subsidized credit. Going even further down the size scale, De Mel, McKenzie, and Woodruff (2008) use a randomized experiment in Sri Lanka to test the productivity of capital by providing small grants to a group of microentrepreneurs and comparing their returns to a control group. These researchers find annualized returns of 55 to 63 percent. It is important to note that this evidence is suggestive of credit constraints and not evidence in favor of credit subsidies given the partial equilibrium and short-term character of the analysis.

Alleviating financing constraints of SMEs and leveling the playing field between firms of different sizes is thus an important channel through which financial deepening can have direct and indirect impacts on firm and aggregate growth. The literature has identified

different specific channels, through which financial development affects firm and ultimately aggregate growth. First, the availability of external finance is positively associated with the number of start-ups—an important indicator of entrepreneurship—as well as with firm dynamism and innovation (e.g., Aghion, Fally and Scarpetta, 2007; Ayyagari, Demirgüç-Kunt and Maksimovic, 2011a). Second, finance also allows existing firms to exploit growth and investment opportunities, and to achieve larger equilibrium size (e.g., Beck, Demirgüç-Kunt and Maksimovic, 2006). Finally, firms can safely acquire a more efficient productive asset portfolio where the infrastructure of finance is in place, and they are also able to choose more efficient organizational forms such as incorporation (e.g., Demirgüç-Kunt, Love and Maksimovic, 2006).

In summary, financing constraints are not only higher for smaller firms, but are also more of a growth impediment for smaller than for larger enterprises. Financial deepening helps alleviate these constraints and their impeding impact on SMEs' growth. By alleviating SMEs' financing constraints, a well developed financial sector ultimately contributes to job creation and poverty alleviation, by allowing more entrepreneurship, faster firm expansion and more efficient resource allocation. Further below, we will drill a bit deeper and consider specific dimensions of the financial deepening process and their relationship with SME finance. Specifically, we will discuss different financing forms and different institutions that can cater to SMEs.

3. Differentiating among different firms

The transmission channels through which SME finance affects economic development might differ with different segments within the large population of SMEs; specifically, micro, small and medium-sized enterprises. While all three types of enterprises suffer from financing constraints and other obstacles in the business environment, policies and interventions to overcome them vary significantly across these firm types. In addition to the size distinction, there are other characteristics, including age and sector, that call for different approaches and that might imply different channels through which financial deepening affects poverty.

Subsistence entrepreneurs have tiny businesses, based on self-employment and informality and are almost exclusively micro-entrepreneurs. Many of these enterprises are set up out of lack of alternative employment options for the owner in the formal sector. They rely almost exclusively on the owner, maybe with support from family members and/or friends. There is evidence that such subsistence entrepreneurs make up the majority of microenterprises. De Mel, McKenzie, and Woodruff (2010) show that only 30 percent of microenterprise owners in Sri Lanka have characteristics like large firm owners, whereas 70 percent are similar to wage workers. Bruhn (2013) finds that about 50 percent of a sample of Mexican micro-entrepreneurs are similar to wage workers. This indicates that a large share of microenterprise owners may be running their business to make a living while they are looking for a wage job and may not have plans for expanding the business. Liedholm (2001) provides additional evidence by reporting findings from the Dominican Republic and Zimbabwe: during periods of rapid growth, employment growth comes from existing enterprises hiring workers, while the contribution to overall employment from net firm creation is actually negative. By contrast, during economic downturns, the contribution of existing enterprises to overall employment growth is lower or negative and employment growth from net firm creation is positive, suggesting that these new firms might be former wage workers.

Very different from these subsistence entrepreneurs are transformational entrepreneurs, who are often leading larger enterprises that create jobs, while microfinance clients are only rarely of the transformational kind. For long-term effect on aggregate growth and job creation, a stronger focus on transformational enterprises is therefore needed.[10] This is also consistent with Fafchamps and Woodruff (2011) who suggest that different programs should be targeted at different groups: "programs on expansion, employee management and innovation for those with more growth potential" and " programs on mitigating risk and increasing income for those not likely to expand."

[10] Among transformational enterprises, there is often a further emphasis on "gazelles", enterprises with exceptionally high growth rates over longer periods.

The distinction between subsistence and transformational entrepreneurs is also important when assessing the impact of policy reforms. Bruhn (2013), for example, finds that easing the process of business registration in Mexico led to an increase of business registration among entrepreneurial types, but a decrease among wage earner type entrepreneurs who were rather more likely to become wage earners after the reform.[11] Similarly, Aterido, Hallward-Driemeier and Pages (2009) show that the distinction between small and micro-enterprises can be a very important one. Using enterprise survey data across 90 countries, they show that small firms with more than 10 employees are negatively affected by an adverse business environment to a larger extent than micro-enterprises with fewer than 10 employees.

Distinguishing between different segments among SMEs is also important in terms of their financing needs and the different options to ease their financing constraints. Informal micro-entrepreneurs seem "ideal" clients for micro-finance institutions, which rely on community links and "informal types" of collateral[12] for their lending. Many medium-sized enterprises, on the other extreme, might be candidates to look beyond the banking system towards capital market types of finance, including private equity funds or even listing on secondary boards of stock exchanges with lower listing requirements. The segment in between, the "small" enterprises, seems the trickiest one, as they are often limited to banks as their only provider of formal finance.

4. Differentiating between different policy levers – the access possibilities frontier

Financial deepening is the outcome of structural country characteristics and financial sector policies. While financial sector deepening in general contributes to alleviating SMEs' financing constraints, there are also specific policies that can help SMEs overcome their financing constraints. In the following I will use the concept of the access possibilities

[11] These differential effect is similar to recent work in the area of microfinance, where different effects of access to credit have been documented depending on the characteristics of the borrower (entrepreneurial type or not). See, for example, Banerjee et al. (2009).

[12] This includes household assets that are critical for the welfare of the family, such as e.g. refrigerators or TV sets, but have little outside market value.

frontier to discuss different categories of financial sector policies and interventions before turning to empirical evidence for different policies and interventions (see Beck and de la Torre, 2007 for a more in-depth discussion).

Transaction costs and information asymmetries drive the variation in access to finance across firms of different sizes. Fixed transaction costs in credit assessment, processing, and monitoring result in a decrease of unit costs as the size of the loan increases, which makes lending to SMEs more costly. In addition to transaction costs, SME lending, more than other lending products, is affected by challenges in managing risks. Compared with large firms, SMEs are commonly more opaque, less likely to be able to post collateral, and often do not have audited financial statements that allow a better picture of the enterprise and its projected profits. Compared to retail clients, financial institutions can rely less on the law of large numbers to exploit scale economies and diversification benefits.[13]

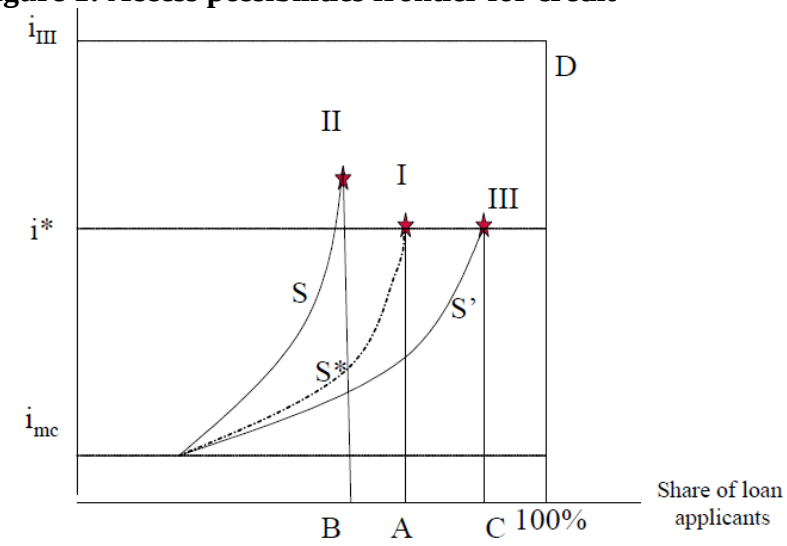
Lending techniques, government policies and structural characteristics of financial systems and economies affect the extent to which transactions costs and risk reduce SMEs' access to external funding. We define as the *access possibilities frontier* the maximum share of SMEs applying for loans that can be served by financial institutions in a commercially viable way (see Figure 1, Point I, *A*).[14] This concept implies that, in many economies, a large share of micro-enterprises and even small formal firms might not be bankable from a commercial viewpoint. This frontier—and thus the share of bankable SME loan applicants *A*—is determined by technology as well as the institutional framework within which financial institutions operate.[15] However, a financial system can very well operate either below or above this frontier, as I will discuss in the following.

[13] See Beck and de la Torre (2007) and de la Torre, Martinez Peria and Schmukler (2010) for a more in-depth discussion and references

[14] As discussed in more depth in Beck and de la Torre, (2007), the fact that there is no unique combination of costs, expected return, and risk that maps one-to-one to the interest rate limits our graphical analysis to loan applicants as opposed to all potential borrowers.

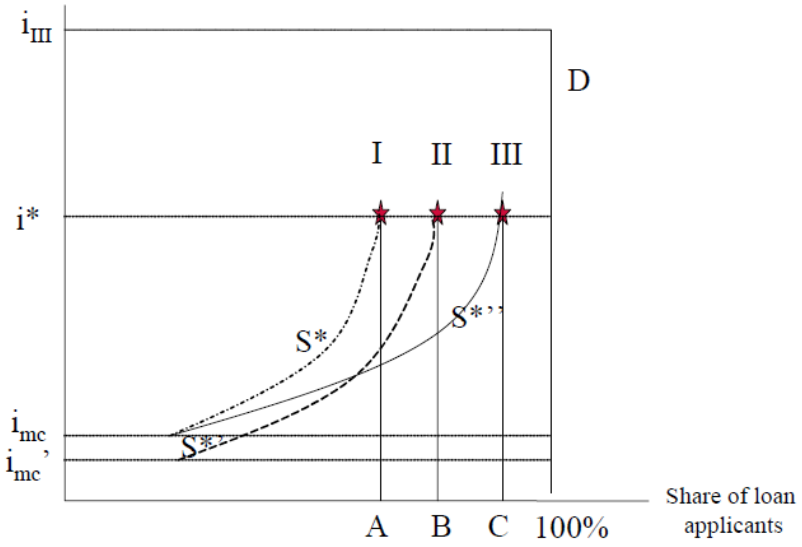
[15] The supply curve underlying this concept is non-linear and can bend backward. i* denotes the marginal interest rate at the rationed equilibrium rather than the market-clearing equilibrium. For a detailed technical discussion on the derivation of these curves, I would like to refer the reader to Beck and de la Torre (2007).

Figure 1: Access possibilities frontier for credit



Source: Beck and de la Torre (2007)

Figure 2: Access possibilities frontier for credit – changes in state variables



Source: Beck and de la Torre (2007)

We can use the access possibilities frontier to identify several types of access to credit problems. A first type of access problem is demand-originated. This problem may be evident in too low a number of loan applicants simply because of self-exclusion resulting from

cultural barriers or financial illiteracy. Alternatively, there may be a lack of profitable investment projects in the economy that deserve financing based on their expected return. This problem can actually not be illustrated in our figure as it focuses on loan applicants. A second type of access problem can arise from regulatory distortions or insufficient contestability that cause lenders not to fully exploit all the outreach opportunities and thus settle at a point below the access possibilities frontier (Figure 1, Point II, B). A third and very different access problem is associated with "excess access," that is, an equilibrium above the access possibilities frontier with loans being granted to a larger share of loan applicants than is prudently warranted or SMEs achieve too high a leverage, given the lending interest rate and the institutional framework (Figure 1, Point III, C). A final access problem consists of too low a prudent access possibilities frontier, caused by deficiencies in an economy's institutional framework compared with that of countries with similar levels of economic development. An improvement along these lines would lead to an expansion of the frontier from S* to S*'' in Figure 2. Similarly, lower opportunity costs of funding (i_{mc}), e.g. due to better macroeconomic conditions, will increase the universe of potential loan applicants receiving finance (Figure 2, Point II, B).

Each of these types of access problems calls for different policies. The first—demand-originated problems—calls for demand-side measures that educate and encourage the healthy use of financial products by SMEs. While the literature has traditionally focused on supply-side constraints, the last couple of years have seen several financial literacy randomized control trials (RCTs) for entrepreneurs, including in Uganda (McKenzie and Weber, 2009), Bosnia and Herzegovina (Bruhn and Zia, 2013), Peru (Karlan and Valdivia, 2011), Dominican Republic (Drexler, Fischer and Schoar, 2010), Sri Lanka (De Mel, McKenzie and Woodruff, 2012), Pakistan (Gine and Mansuri, 2011) and Central America (Klinger and Schündeln, 2011). There is a large variation in findings, with a general conclusion being that tailor-made interventions can have an impact on entrepreneurship and business expansion under certain circumstances. But as s stressed by McKenzie and Woodruff (2012) in their

summary, these assessments have provided some answers, but "many of the key questions needed to justify large-scale policy interventions in this area remain unanswered."

The second problem calls for interventions and policies that encourage financial institutions to maximize outreach to SMEs within the existing contractual and macroeconomic environment. Conversely, restraining measures may be called for when loans are being provided to numbers of applicants beyond what can be considered prudent. The final type of problem, too low a prudent access frontier, requires a set of policies that provide for general reforms of the business environment and institutional framework that are not specific to the SME lending market. However, as we will discuss in the next section, the business model and lending techniques available to financial institutions also have a critical impact on the frontier. In the following, I will discuss these different policies in more depth.

Supply-side constraints can arise from regulatory distortions or insufficient contestability that cause lenders to not fully exploit all the outreach opportunities and thus settling at a point below the access possibilities frontier. Interventions can be both at the institution level as well as at the policy level. On the institution level, this can include upgrading of screening, monitoring and risk management systems, with the goal of lower costs and better risk management translating into higher outreach. While there might be thus a direct and possibly quick impact on the institution level, gauged by outreach indicators, there might be repercussions throughout the banking and even broader financial system, through demonstration or competition effects. Such effects can arise both by helping an incumbent or a new entrant. Two recent papers show the effect of branch expansion by one specific institution on access to financial services and business creation; Allen et al. (2012) show that the expansion of Equity Bank in Kenya using new delivery channels and techniques increased use of formal financial services especially among previously unbanked population groups, while Bruhn and Love (2013) show that the expansion of Banco Azetca in Mexico increased entrepreneurial activity, labor market participation and ultimately income levels. On the policy level, interventions to push the financial system include (but are not limited to)

removing regulatory constraints, related to provisioning and loan classification guidelines related to collateral or loan repayment schedules, client documentation requirements, taxation issues (such as VAT on leasing), and entry barriers into the financial system. Addressing these constraints on the policy level will have indirect impacts on the financial system and might have differential effects on the outreach effort by different financial institutions. It might have also indirect impact by enabling the entry of new providers targeting previously unbanked entrepreneurs.

Beyond targeting competition per se, governments can also try to produce a movement towards the possibilities frontier by addressing hindrances such as coordination failures, first mover disincentives, and obstacles to risk distribution and sharing. While not easy to define in general terms, given their variety, these government interventions tend to share a common feature in creating incentives for private lenders and investors to step in, without unduly shifting risks and costs to the government (de la Torre, Gozzi and Schmukler, 2006).

Partial credit guarantee (PCG) schemes feature prominently among market-activist policies.[16] While they also exist on a private basis, governments and donors have been aggressively pushing for their establishment to overcome the limited access to bank credit SMEs face. By providing a guarantee, such a scheme can help overcome the lack of collateral of many SMEs, but issues of appropriate pricing, funding and the institutional structure are important. While such schemes could be run on a self-sustainable basis, they often involve significant subsidies and contingent fiscal liabilities to cover losses. While it is difficult to compute such costs ex-ante, it is even more difficult to measure the benefits, which would be partially captured by additionality, i.e. the share of borrowers that would not have gained access to finance if it were not for the PCG. An even more accurate measure would be the extent to which borrowers that would have gotten access to credit in a world without market frictions, could access the credit market due to PGCs, minus the extent to which borrowers gained access

[16] For an overview of the literature on PCGs, see World Bank (2007) and Beck, Klapper, Mendoza (2010) for an overview of the variation in types and characteristics of PCGs across the globe.

through the PCG that would not have gotten access in a friction-free world. Ultimately, the cost of any government intervention has to take into account the return on each dollar of taxpayer's money in such an intervention compared to other interventions, including interventions outside the financial sector. While most of the literature has focused on the potential benefits of credit guarantees, the risks should not be ignored. Partial credit guarantees can be used for regulatory arbitrage purposes (Honohan, 2010). In addition, poorly designed guarantee schemes (e.g. high guarantee shares, and limited screening and monitoring requirements) and political interference can create incentives for banks to take aggressive risks that turn into contingent and ultimately realized fiscal liabilities.[17]

There have been few rigorous impact assessments of partial credit guarantees, though the few that have been undertaken point to a somewhat positive effect, as by Lelarge, Sraer, and Thesmar (2010) in the case of the French credit guarantee scheme. Two separate studies suggest that the Chilean scheme FOGAPE has generated additional loans for new and existing bank clients and that the additional loans have led to higher sales and profit growth (Cowan, Drexler, and Yañez 2009; Larrain and Quiroz 2006) However, another study questions the additionality effect as approximately 80 percent of the firms that benefit from the guarantees had bank loans in the past (Benavente, Galetovic, and Sanhueza 2006). A recent evaluation of the British Enterprise Finance Guarantee Scheme, introduced in 2009 to alleviate SMEs' financing constraints during the crisis, offers some evidence on additionality, though this is based on self-reported firm responses and relies on a sample of matched enterprises (Allinson, Robson and Stone, 2013). More evidence is needed to gauge what characteristics constitute a successful credit guarantee scheme, exploiting the large variation in experiences across countries.

A different access problem consists of an access possibilities frontier that is lower than in comparable countries, due to deficiencies in the macroeconomic and institutional framework

[17] The housing boom and bust cycle in the U.S. ending in 2006 has to a large extent been attributed to political pressure in favor of house ownership and guarantees provided through government-sponsored enterprises, such as Fannie Mae and Freddie Mac (Rajan, 2010).

compared to countries with similar levels of economic development. These constraints call for general reforms of the business environment and institutional framework that are not necessarily specific to the SME lending market. One institution that can have a positive impact on lending to SMEs is the introduction of credit registries or bureaus. Brown, Jappelli and Pagano (2009) show for a sample of transition economies that the introduction or upgrade of credit registries in the 2000s reduced SMEs' financing constraints. By enhancing competition in the banking system, credit registries can help expand outreach, by either increasing competition among incumbent banks or easing the entry of new players. As is the case with policies that help push the financial system towards the frontier, the effects on SMEs' access and use of external finance is an indirect one, with the effect not to be expected in the short-term. The effect can show both in lower, but also more differentiated interest rates for SMEs (better reflecting their riskiness) as well as a larger share of SMEs with external finance. The effect should also be a differential one across enterprises of different sizes, with smaller and more opaque enterprises benefiting more (Love and Mylenko, 2003). Another important institutional innovation can be improvements in movable collateral frameworks. Love, Martínez Pería, and Singh (2012) explore the impact of introducing collateral registries for movable assets across 73 countries. Their results suggest a positive effect of introducing movable collateral registries on firms' access to finance, an effect stronger among smaller firms.

By expanding the variety of assets that can be used as collateral, a sound and effective collateral regime is especially important for SMEs' access to finance. Haselmann, Pistor and Vig (2009) show that changes in collateral laws were more important than changes in bankruptcy laws for the expansion of credit in twelve transition economies in the 1990s. However, there is also countervailing evidence on the effect of strengthening creditor rights by negatively affecting the demand side. Using cross-country comparisons, Acharya and Subramian (2009) and Acharya, Amihud and Litov (2011) show that higher creditor rights lead to lower corporate risk-taking and less innovation. Vig (2013) shows for India that

strengthening creditor right in the context of a securitization reform led to a reduction in secured debt and an increase in liquidity hoarding by firms.

For completeness, I would like to mention a final access problem that is associated with "excess access," that is, an equilibrium above the access possibilities frontier with loans being granted to a larger share of loan applicants than is prudently warranted, given the lending interest rate and the institutional framework. Most of this literature has focused on the more general nature of credit boom and bust cycles (Claessens, Kose and Terrones, 2011), on housing finance at the core of such cycles and less so specifically on SME finance. The Global Financial Crisis and still unfolding Eurozone crisis has provided several examples of asset price and credit bubbles, often linked to housing finance. Examples from the Central and Eastern Europe also point to the risk of foreign currency lending – while in the short-term, such lending offers attractive terms to borrowers in the form of lower interest rates, it involves high risk, especially in the case of sharp and unexpected exchange rate depreciations. While larger enterprises have higher expertise and capacity to manage and hedge such risks, SMEs might not have this capacity.[18]

Avoiding the financial system from moving beyond the prudential frontier and thus avoiding excess leveraging of SMEs is a rather tricky task, as bubbles are often only recognized as such once they are well under way or after they have burst. While traditional regulatory and supervisory policies have aimed at forcing creditors to properly price their risk, constructing an "incentive-compatible financial safety net" that avoids bail-outs, the recent crises have widened the emphasis towards herding behavior by financial institutions and market participants and endogenous credit cycles. Macro-prudential policies, including counter-cyclical regulatory tools, such a provisioning and capital requirements but also credit growth restrictions, have gained prominence in the regulatory toolkit.

[18] On the other hand, Brown, Ongena and Yesin (2011) show for a large firm-survey sample from former transition economies that takers of foreign currency borrowers are better equipped than to bear the corresponding risks than commonly thought. Similarly, Allayannis, Brown and Klapper (2003) do not find that unhedged foreign currency positions had a negative impact on firm performance during the East Asian crisis of 1997.

5. Competition, regulation and crises

This section reviews four specific policy and institutional areas – competition and market structure, lending techniques, regulatory policies and SME finance during the crisis. I relate this discussion also back to the concept of the access possibilities frontier, introduced in the previous section.

5.1. Competition and market structure

Across the globe, there is a wide variation in market and ownership structures of banking system. On the one hand, there are many small and concentrated banking systems, especially in low-income countries, with often fewer than ten banks; on the other hand, Germany has several hundred small, locally operating banks. Market structure can change over time, as the U.S. has shown, with deregulation in the 1970s and 1980s resulting in a move from many small local banks to consolidation and the rise of national banks. Ownership structures also vary significantly across countries, with a few countries still relying heavily on government-owned banks, other having mostly domestic privately owned banks and others relying mostly on foreign-owned banks, such as in many countries in Central and Eastern Europe and Sub-Saharan Africa (Claessens and van Horen, 2014). Some countries, such as Mexico, have gone from government-owned banking systems over domestic privately owned banks to foreign-dominated banking systems within a few years (Beck and Martinez Peria, 2010).

The theoretical and empirical literature is ambiguous on the effect of market structure and competition in the banking sector on access to finance. While the traditional market efficiency view regards more competitive markets as conducive for access to external finance (e.g., Pagano, 1993), others point to market power as providing the necessary incentives to establish long-term lending relationships (Gerschenkron, 1962; Petersen and Rajan, 1995). Cetorelli and Gambera (2001) show that industries in which young firms rely more on external finance grow faster in countries with more concentrated banking systems. Similarly, Bonacorsi di Patti and Dell'Ariccia (2004) show for Italy that bank concentration is

conducive for access to external finance in industries that are less transparent, thus more reliant on long-term relationships. Beck, Demirguc-Kunt and Maksimovic (2004), on the other hand, show that bank concentration increases obstacles to access to finance by SMEs, but only in countries with low economic and institutional development. Similarly, Black and Strahan (2002) find for the U.S. that higher concentration is associated with lower new firm formation, while Kerr and Nanda (2009) find that higher competition after deregulation led to higher entry *and* exit and thus higher churn among entrepreneurs in the U.S. Using the Lerner index as measure of market power, Carbo-Valverde, Rodriguez-Fernandez and Udell (2009) find that higher competition improves credit availability for SMEs in Spain.

Taking a broader view on banks' business lines, Boot and Thakor (2000) argue that more competition will reduce profit margins more in transaction than in relationship lending and thus push banks towards relationship lending, a hypothesis supported by empirical analysis for Belgium (Degryse and Ongena, 2007).

Complicating the debate is the fact that market structure, as for example measured by concentration ratios, is not the same as competition, which is also influenced by the segmentation and contestability of a market (Claessens and Laeven, 2004). Further, state variables such as the contractual and informational frameworks can influence the competitiveness of a financial system through the ability to transfer collateral easily from one lender to another and the ability of SMEs to build up reputation capital through a credit registry (Beck, Demirguc-Kunt and Maksimovic, 2004).

Related to the question of market structure is that of bank size. It has often been conjectured that smaller banks with flatter hierarchies and shorter geographic distance between borrower and ultimate loan decision taker are more conducive to small business lending, as they are more efficient in processing soft information (Berger and Udell, 1995; Stein, 2002). Sapienza (2002) and Berger et al. (2005) confirm this hypothesis with data for the U.S. Canales and Nanda (2012), on the other hand, show for Mexico that more decentralized banks are indeed

more likely to provide larger loans to small enterprises, but are more likely to exploit their market power in concentrated markets. Looking beyond banks, Beck, Demirguc-Kunt and Singer (2013) show that small-scale financial institutions catering specifically to SMEs are not necessarily more effective than large institutions

Finally, the issue of market structure is also related to that of ownership of banks. Foreign bank ownership has been especially controversial in terms of its effects on SMEs' access to external finance. On the one hand, cross-border banks can help foster improved corporate governance; they can bring in much-needed technology and experience, which should translate into increased efficiency of financial intermediation and they can help exploit scale economies in the small host countries. On the other hand, the larger reliance of foreign banks on hard information about borrowers as opposed to relying on soft information can have negative repercussions for riskier and more opaque borrowers if foreign banks crowd out domestic banks.[19]

There is mixed evidence concerning the effect of foreign bank entry on SME lending. On the one hand, firm-survey evidence suggests that firms report lower financing obstacles in countries with a higher share of foreign banks, a finding that holds across different size groups of firms (Clarke, Cull, and Martinez Peria, 2006). This positive effect can be a direct or an indirect one. Foreign banks can bring the necessary know-how and scale to introduce new transaction lending techniques. By competing with domestic banks for large corporate clients, they can also force domestic banks to go down market to cater to SMEs (de Haas and Naaborg, 2005). On the other hand, loan-level information from specific countries suggests that foreign banks are less likely to lend to small and opaque companies than domestic banks (Mian, 2006; Gormley, 2006). So, any positive effect of foreign bank entry on SME lending seems to be more indirect than direct. More recent work on Bolivia, however, suggests that foreign and domestic banks can lend to the same clientele, though with different techniques, a topic discussed below. Specifically, the effect might be a function of the informational and

[19] See, for example, Gormley (2007), Sengupta (2007) and Detragiache, Gupta and Tressel (2008).

contractual frameworks of countries, as argued by Claessens and van Horen (2014) and Bruno and Hauswald (2008) who show that foreign bank entry has a positive effect in countries with more efficient credit information sharing systems and creditor right protection.

In summary, market and ownership structure are important factors for SME finance and a financial system's location relative to the access possibilities frontier. The evidence, however, is not clear-cut, although one could reach the tentative conclusion that competition and openness to foreign ownership can help ease SMEs' financing constraints where the necessary institutional and regulatory conditions prevail.

5.2. Lending techniques

Closely linked with the debate on market and ownership structure and SME finance is the discussion on different lending techniques that are appropriate for SME lending. The traditional view of SME finance focuses on relationship lending.[20] Longstanding relationships between a financial institution, or even a specific loan officer, and the borrower allow problems of information asymmetry and thus risk to be overcome. Relationship-based lending, however, is costly, moving the equilibrium away from the possibilities frontier discussed earlier. The focus on relationship lending as underpinning SME finance also implies that smaller and local financial institutions are more effective in lending to SMEs than large and foreign-owned banks, as already discussed above.

Recently the more nuanced view has been put forward that large and foreign banks, relative to other institutions, can have a comparative advantage at financing SMEs through arms-length lending technologies, such as asset-based lending, factoring, leasing, fixed-asset lending, credit scoring, and centralized organizational structures.[21] While relationship lending might thus be better done by small, community-based financial institutions,

[20] Berger and Udell (1998).

[21] See Berger and Udell (2006) and de la Torre, Martinez Peria, and Schmukler (2010).

transaction-based lending is more cost-effectively done by large financial institutions that can exploit the necessary economies of scale that investment in technology implies. In many developing countries, this debate has an additional dimension, because smaller banks are often owned by domestic shareholders, while large financial institutions are often foreign-owned. However, there is not a perfect mapping of size and ownership, a distinction exploited by Clarke et al. (2005) who show across four Latin American countries that large foreign banks often have a greater share and higher growth of lending to small businesses than large domestic banks, with the reverse holding for small banks of different ownership.

Using data for 91 banks across 45 countries, Beck, Demirguc-Kunt and Martinez Peria (2011) find that foreign banks are more likely than domestic banks to use transaction-based lending techniques and more centralized business models. However, they also show that foreign banks do not tend to lend less to SMEs than other banks. It thus seems that both relationship- and transaction-based lending techniques are appropriate for SME lending, and that both domestic and foreign-owned banks can cater to SMEs.

More recent evidence suggests that foreign and domestic banks can cater to the same clientele, by using different lending techniques. Specifically, Beck, Ioannidou and Schäfer (2012) find for Bolivia that foreign and domestic use different lending techniques for the same clientele, with foreign banks relying more on internal ratings, collateral and shorter maturities as disciplining tools and domestic banks relying more on relationship lending. However, this also suggests that transaction-based lending and thus effective lending to SMEs by foreign banks relies on several basic institutional pre-requisites, including collateral and credit registries, as already discussed above.

There are also specific transaction-based lending techniques that seem especially conducive for expanding SMEs' access to external finance. Leasing is an attractive financing tool for SMEs—from the perspective of both demand and supply—because it is based on the cash flow of the financed asset, such as machinery or vehicle, rather than the reputation or the

asset base of the enterprise. It also often includes tax advantages, and it allows for easier recovery if the correct legal framework is in place. Factoring, the discounting of accounts receivables, is attractive for small suppliers of large credit-worthy buyers because it does not rely on information about the borrower, but rather on the obligor.[22] Both leasing and factoring rely on a legal framework to govern the transactions but rely to a lesser extent on the contractual framework of a country. Thus these techniques can help push a financial system toward the frontier of SME lending, even if this frontier is low.

5.3. SME finance through the economic cycle

There is ample evidence for the cyclical behavior of bank lending over the business cycle, with total lending volume typically being more volatile than economic activity. One important channel is borrowers' net worth, which determines borrowing capacity. Financial intermediation can thus exacerbate economic cycles through an accelerator effect (Bernanke and Gertler, 1989). This cyclical behavior can be made worse by capital requirements, as I will discuss in more detail below. Given that smaller firms rely more on bank finance than large corporations, this implies that SMEs are financially more constrained during crises than other firms.

In addition, banking credit is an important transmission channel for monetary policy. First, monetary policy typically has a more prominent impact on smaller banks that are less able to raise alternative funding in the case of monetary tightening and have to reduce loan supply more than larger banks (Kashyap and Stein, 1995). If smaller banks lend more to smaller enterprises, this would then have also a disproportionally more negative effect on SME lending. However, as discussed above, bank size does not have an unambiguous relationship with the share of SME lending. Second, monetary tightening reduces collateral values and thus creditworthiness, especially for smaller enterprises that will therefore suffer more from monetary tightening (e.g., Bernanke and Gertler, 1995).

[22] Klapper (2006).

Bank failures, both idiosyncratic and during systemic banking crises, have severe negative repercussions for their borrowers, as shown by several studies. Bernanke (1983), Calomiris and Mason (2003), and Kupiec and Ramirez (2009) show the negative economic repercussions of bank failures in the 1920s and '30s in the United States and the consequent loss of lending relationships, while Ashcraft (2005) documents the decline in lending and local GDP following the closure of a large (solvent) affiliate in a regional bank holding company in Texas in the 1990s. Ferri, Kang, and Kim (2001), and Djankov, Jindra, and Klapper (2005), respectively, have shown the importance of lending relationships across a sample of Korean firms that worked with either failed or surviving banks after the crisis and the negative effect of bank insolvency announcement during the East Asian crisis on market values of the banks' borrowers. On a more aggregate level, cross-country comparisons have shown that during banking crises, industries that depend more on external finance are hurt disproportionately more, an effect that is stronger in countries with better developed financial systems (Dell'Ariccia, Detragiache, and Rajan, 2008: Braun and Larrain, 2005; Kroszner, Laeven, and Klingebiel, 2007).

There is also evidence for the negative repercussions of not aggressively addressing bank fragility, with lessons for the current Eurozone crisis. Specifically, Peek and Rosengren (2005) show that Japanese firms are far more likely to receive additional credit if they are in poor financial condition, and these firms continue to perform poorly after receiving additional bank financing. This phenomenon can be explained with banks evergreening non-performing loans to avoid recognition of losses. Ahearne and Shinada (2005) show the negative repercussions of this phenomenon, by documenting that productivity growth is low in industries reputed to have heavy concentrations of zombie firms.

There is also evidence on an interaction between banking market structure and systemic banking crises in their effect on SMEs' financing constraints. Popov and Udell (2012) find evidence for a propagation of banking distress in Western Europe to their subsidiaries in

Central and Eastern Europe, ultimately reducing SMEs' access to finance in these countries. Presbitero, Udell and Zazzaro (2014) show for a sample of Italian SMEs that the effect of the recent financial crisis has been larger in provinces with a larger share of non-local banks that are distantly managed.

While there is evidence that SMEs might be able to substitute bank credit for trade credit during times of crisis (Petersen and Rajan, 1997; Fisman and Love, 2003), Love, Preve and Sarria-Allende (2007) show for a sample six crisis countries in Latin America and East Asia that trade credit dropped dramatically, starting a few months after the onset of the crisis. They explain their finding with fact that during systemic crises, large enterprises also lose easy access to bank credit and are therefore not able to pass on this funding in the form of trade credit to financially even more constrained enterprises. While bank and trade credit are thus substitutes during normal economic cycles, they are complements during systemic banking crises. Taketa and Udell (2007) confirm this enterprise data for Japan and the credit crunch period in the mid-1990s.

5.4. Regulatory policies and reform

Regulatory policies can be important to push the system towards the frontier of SME lending or prevent the systems from moving to the frontier. I would like to point out just a few here. First, loan classification and provisioning rules can affect SMEs' access to finance, through reliance less on collateral than on forward-looking assessment of payment performance. Specifically, loan classification systems that rely completely on collateral typically bias against SMEs who have less "hard" collateral available.

Second, capital requirements can be an important factor. Adasme, Majnoni and Uribe (2006) show that SME lending might require more provisioning but less capital, given that the distribution of losses from small loans is less skewed than that for large loans. Further, the reliance of risk weights for assets on market assessment introduces a bias against SMEs, which are typically perceived as riskier. This bias is exacerbated over the business cycle as

the creditworthiness of SME varies typically more than that of large enterprises, as I have discussed above. While financial stability concerns might be a justification for such a bias, it is important to understand that this bias might undermine SMEs' access to bank finance.

This cyclical effect of capital requirements on lending is exacerbated by introducing time-varying risk weights, such as done under Basel 2. This will make capital requirements even more procyclical inducing a reduction of the credit supply in down-turns and overshooting in an upturn (Repullo and Suarez, 2012). There is some empirical evidence on the effect of risk-weighted capital requirements for the U.S.; e.g., Hancock and Wilcox (1998) show that during the credit crunch period in the early 1990s, small banks shrank their loan portfolios more than large banks did and this had a larger effect on the real economy.

In the context of the Basel 3 discussions on tighter capital and liquidity requirements, the issue of SME financing constraints has been raised again. While it is not clear whether higher capital requirements per se will result in reduced SME lending, the risk weighting system under new Basel 3 regime tends to be skewed towards larger firms. For example, a large firm with an AAA rating is assigned a 20% risk weight, while an SME that is unrated is assigned a 100% or 75% risk weight, implying significant higher capital charges for SME lending than for lending to large rated enterprises.[23]

6. Conclusions

While the size of the SME segment is not important for economic development, its dynamism is. Financial deepening can help alleviating SMEs' financing constraints and through this channel reduce poverty and create high-quality jobs. In terms of policy interventions to foster SME finance, it is important to distinguish between policy areas on several levels,

[23] See DFID (2013). For a more in-depth discussion on the effect of regulatory reforms on financial sectors in developing countries, including SMEs, see DFID (2013).

including long-term institution building and more short-to medium-term regulatory policy changes and interventions to overcome demand and supply-side constraints. It is important to note that some policies reforms involve a trade-off between financial stability and deepening and political decisions are necessary to decide on these trade-offs. To give just a few examples: Rapid credit expansion can lead to fragility, especially if in a poor institutional and regulatory environment; increased competition following liberalization can undermine stability; and partial credit guarantees can entice aggressive risk-taking.

While a lot of evidence has been collected on the relationship between financial deepening and banking markets structure, on the one hand, and SMEs' financing constraints, on the other hand, much less is known about the effectiveness of specific financing forms and policy interventions. What is the availability and impact of alternative financing forms, such as leasing and factoring? What is the equity gap in SMEs and to which extent can equity funds contribute to filling it? What are the effects of public policy interventions, such as partial credit guarantees – under which circumstances and with which design features do they work best? Similarly, what is the impact of demand-side interventions such as financial literacy and managerial capital programs? While there is an extensive but still growing literature gauging the impact of specific interventions on micro-entrepreneurs, there is an increasing interest to go beyond micro- to small and medium-sized enterprises, though such a move poses significant problems for applying RCTs, most prominently in terms of number of observations and properly identifying and maintaining a control group, as well as the higher cost of budgeting an SME finance RCT as compared to a microfinance RCT.

While there are still many open questions, the literature so far does allow some critical policy-relevant insights. First, specific policy reforms and interventions might have a different impact on enterprises and entrepreneurs of different age, gender, size and motivation. Future design and assessment of interventions and policy reforms should focus more on such differential effects. Second, there is a critical interaction between different policies and

interventions; to cite just one example given earlier, competition and foreign bank entry have different impacts on SMEs' access to finance depending on the contractual and information frameworks in the respective country. This also implies that one size does not fit all. Different policies and interventions might be relevant for different countries and in different circumstances. A third and more general conclusion for future evaluations is that different research methodologies are called for to assess different policies and interventions, depending on whether the assessment is ex-ante or ex-post, whether the implementation is in a geographically restricted area or on the national level, and what kind of data are available. As with policies, one research methodology does not fit all circumstances. Fourth, more data are needed both on the importance of SMEs in the real economy as on the financing of SME. The Enterprise Surveys have provided enormous opportunities for analysts and researchers, but still lack information on many aspects of firms' "financial life", such as more detailed financing information. Panel samples, where firms are being revisited in regular intervals and as increasingly implemented for a larger and broader sample of countries, will allow researchers to test for the effect of policy reforms or changes in financial market structure over time. Surveys of informal enterprises and their constraints can provide additional important insights. Databases on entrepreneurs (Klapper et al., 2010) and surveys of potential and actual entrepreneurs (Djankov et al., 2006) can provide important information into the demand side of SME finance.

Going forward, analysis and research should focus on gauging what policies and interventions work best to ease SMEs' financing constraints. More money might not always be the solution, whereas smart interventions, often based on public-private partnerships, might help. And these solutions are most likely country-specific and tailored to specific circumstances.

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