

Loan Guarantee Schemes as a policy instrument for financing entrepreneurial businesses

The author discusses the theoretical basis for a loan guarantee scheme and describes its function and component parts. In addition, it provides some examples of how such systems can be formulated in practice.

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Foreword

There is great political interest in promoting enterprise, entrepreneurship and growth. An important aspect in relation to this is that a well-functioning capital market exists for new and small companies. In some cases, difficulties can arise for the market actors themselves in effectively resolving the companies' demand for financing. Examples of this can be; a high degree of uncertainty, long lead times, the liability of newness, or companies not having enough collateral. State interventions can then be discussed in this context.

Even though the policy debate often focuses on the supply of venture capital, loan finance is the most important external source of funds for the majority of companies. In cases where the company is young, or does not have sufficient amount of collateralisable assets, the bank might be hesitant or unwilling to lend the capital that the company needs. In these cases, a risk thus arises that good business opportunities cannot be fully financed.

The report addresses loan guarantee scheme (LGS) – a debt policy instrument. LGS means that a third party (the government) acts as a guarantor for a company's loan application to the bank. However, the government does not guarantee the entire loan amount, rather the bank also has to take on a part of the risk so that it has an incentive to conduct a thorough and responsible due diligence. The author discusses the theoretical basis for a LGS and describes its function and component parts. In addition, it provides some examples of how such systems can be formulated in practice, experience from evaluations, as well as something about the circumstances which are typically associated with the need for a corrective LGS. It is primarily international experiences that are used, but circumstances and conditions in Sweden are also touched on in brief. Some policy proposals are provided by way of conclusion.

The report was written by Marc Cowling, Professor of Entrepreneurship and Deputy Head of Department at Brighton Business School in England. Cowling is a world leading expert on loan guarantees, small business policy and the evaluation of financial instruments.

Project manager at Growth Analysis was the analyst Jörgen Lithander.

Growth Analysis' ambition is to provide a knowledge base for discussions about government interventions in the area of capital provision. This report is a part of that.

The author is personally responsible for the content and conclusions in the report.

A shorter version of the report is also included as a chapter in the book Growth Facts, (2016), "Perspektiv på kapitalförsörjning – en antologi om företagens finansiering och statens roll" [Perspectives on capital provision – an anthology about financing of enterprises and the government's role].

Östersund, January 2017

Jan Cedervärn
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Förord

Det politiska intresset för att främja företagande, entreprenörskap och tillväxt är stort. En viktig aspekt i detta är att det finns en väl fungerande kapitalmarknad för nya och små företag. I vissa fall kan det uppstå svårigheter för marknadsaktörerna själva att lösa företagens kapitalförsörjning på ett effektivt sätt. Exempel på det kan vara hög grad av osäkerhet, långa ledtider, nystartade företag eller företag som saknar tillräckliga säkerheter. Statliga interventioner kan då diskuteras.

Även om det i debatten ofta är utbudet av riskkapital som diskuteras är det för majoriteten av företagen lånefinansiering som är den viktigaste externa finansieringskällan. I de fall när företaget är ungt eller saknar tillräckliga säkerheter kan banken bli tveksam eller ovillig att låna ut det kapital som företaget behöver. I de fallen uppstår alltså en risk att goda affärsmöjligheter inte kan finansieras fullt ut.

Rapporten behandlar statliga kreditgarantier – ett policyinstrument för kreditgivning. Kreditgarantier innebär att en tredje part (staten) fungerar som en garant för ett företags låneansökan till banken. Staten garanterar dock inte hela lånesumman utan banken får också ta en del av lånerisken i syfte att ha ett incitament för att genomföra en noggrann och ansvarsfull kreditprovning (*due diligence*). Författaren diskuterar den teoretiska grunden för ett kreditgarantisystem och beskriver dess funktion och beståndsdelar. Vidare ges några exempel på hur sådana system i praktiken kan vara utformade, erfarenheter från utvärderingar samt något om de förhållanden som typiskt sett associeras med behovet av ett korrigerande kreditgarantisystem. Huvudsakligen används internationella erfarenheter, men kort berörs även förhållanden och förutsättningar i Sverige. Avslutningsvis lämnas några policyförslag.

Rapporten har författats av Marc Cowling, professor i entreprenörskap och biträdande prefekt vid Brighton Business School i England. Cowling är en världsledande expert på lånegarantier och småföretagspolicy och utvärdering av finansiella instrument.

Projektledare vid Tillväxtanalys har varit analytiker Jörgen Lithander.

Tillväxtanalys ambition är att tillföra kunskapsunderlag till diskussioner om statliga interventioner på kapitalförsörjningsområdet. Denna rapport är en del i detta.

Författaren svarar själv för innehåll och slutsatser i rapporten.

En kortare version av rapporten ingår även som ett kapitel i boken Tillväxtfakta 2016: Perspektiv på kapitalförsörjning – en antologi om företagets finansiering och statens roll.

Östersund, januari 2017

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Summary

Loan Guarantee Schemes

- Loan guarantee schemes are operational in more than 100 countries worldwide since the first recorded schemes were initiated in the US and Switzerland in the early 1950s
- They are the single most popular policy instrument in both developed and developing countries
- Fundamentally, they implicitly recognise the fact that entrepreneurial talent is more widely distributed than wealth and that many talented entrepreneurs and firms with viable investment opportunities face collateral based constraints in capital markets. And this problem is more acute for younger and smaller businesses.
- For the public policy maker the attraction of loan guarantee schemes lies in their simplicity which means that entrepreneurs and banks find them easy to understand, access, and administer. And this is important as banks have more relationships with SMEs than any other institution.

Robust evidence from the US, Canada, and UK highlights the fact that well targeted loan guarantee schemes can; (a) create jobs at a low cost over a sustained period, (b) increase productivity as labour and capital are complementary in production for smaller firms, and, (c) alleviate binding credit constraints faced by asset poor but good quality firms.

The Swedish Context

- A more considered and in-depth investigation highlights some interesting features of the Swedish credit market.
- SME, and in particular micro businesses and manufacturing firms, view access to finance as a pressing problem of some concern to them.
- Take-up of short-term debt instruments (leasing, factoring, and credit lines) is particularly high given the financial preferences of firms.
- Around 1 in 7 firms view publicly supported finance as appropriate to them, although a common perception held by Swedish SMEs is that accessing government financing is highly bureaucratic.
- Traditional banks only serve $\frac{3}{4}$ of the total loan market.
- Collateral requirements of debt providers have become increasingly onerous and affect around $\frac{1}{4}$ of all firms.
- Lack of collateral is the single most important limitation on future growth affecting approx. 13 per cent of all firms, and approx. 25 per cent of those who face barriers to growth.

Recommendations

- That the Swedish government develop a specific large-scale SME finance survey aimed at understanding and supporting potential policy interventions in smaller firm capital markets.

- Develop a national pilot loan guarantee scheme for a trial period of 3 years with operational responsibility devolved to private sector financial institutions but ownership and monitoring responsibility retained in the public sector.
- The focus of the proposed pilot loan guarantee scheme should be on all SMEs as financing issues have been shown to be more related to firm size than firm age (i.e. more related to collateral inadequacy than lack of track record).

We estimate that a national guarantee scheme would have the potential to impact on between 2 per cent and 6 per cent of the total stock of SMEs and, within this, a much higher proportion of growth orientated firms.

Sammanfattning

Kreditgarantisystem

- Sedan de första dokumenterade kreditgarantisystemen inrättades i USA och Schweiz i början av 1950-talet, har nu liknande system tagits i bruk i mer än 100 länder världen över.
- Det är det vanligaste policyinstrumentet i både den utvecklade världen och utvecklingsländerna.
- Systemet bygger på antagandet att det finns mer entreprenöriell talang än det finns kapital, och att många duktiga entreprenörer är begränsade på kapitalmarknaderna för att de saknar säkerheter för lån och ofta även tillräckligt lång merithistorik (*track record*). Problemet är större för nya eller relativt nystartade, mindre företag.
- För policymakers lockar kreditgarantisystemens enkelhet, det vill säga att entreprenörer och banker finner dem enkla att förstå, få tillgång till och administrera. Detta är en viktig aspekt eftersom bankerna är de vanligaste finansiärerna till små och medelstora företag.
- Erfarenheter från USA, Kanada och Storbritannien visar att välriktade kreditgarantisystem kan (a) skapa jobb till en låg kostnad under en längre period; (b) öka produktiviteten eftersom arbetskraft och kapital är komplementära faktorer för små företag. Kombinationen av de båda är nödvändiga för företagets produktion; (c) minska kreditbegränsningarna för de företag som har "sund" ekonomi, men saknar säkerheter (tillgångar).

Den svenska kontexten

- En närmare och mer fördjupad undersökning belyser några intressanta egenskaper hos den svenska kreditmarknaden.
- Små och medelstora företag, särskilt mikroföretag och tillverkningsföretag, ser tillgång till finansiering som ett oroande problem.
- Utnyttjandet av kortfristiga kreditinstrument (leasing, factoring och krediter) är särskilt högt med tanke på företagets ekonomiska preferenser.
- Omkring 1 av 7 svenska företag anser att offentligt stödd finansiering skulle vara bra för dem. Samtidigt tycker många svenska små och medelstora företag att en sådan finansiering omgärdas av mycket byråkrati.
- Statliga organisationen Almi är en viktig aktör.
- Traditionella banker betjänar endast tre fjärdedelar av den totala lånemarknaden.
- Kreditgivarnas krav på säkerhet har blivit alltmer betungande och påverkar omkring en fjärdedel av alla svenska företag.
- Brist på säkerhet är den enskilt viktigaste begränsande faktorn för framtida tillväxt. Den påverkar cirka 13 procent av alla företag, och cirka 25 procent av de som berörs av olika tillväxthinder.

Rekommendationer

- Små och medelstora företag, särskilt mikroföretag och tillverkningsföretag, ser tillgång till finansiering som ett oroande problem.
- Vi föreslår att den svenska regeringen tar fram en specifik och storskalig undersökning om finansiering av små och medelstora företag, i syfte att få mer kunskap och underlag för potentiella policyinsatser på kapitalmarknaderna för mindre företag.
- Baserat på undersökningens resultat föreslår vi att regeringen i nästa steg inrättar ett nationellt pilotprojekt med ett kreditgarantisystem under en försöksperiod om tre år, där det operativa ansvaret delegeras till finansieringsaktörer i den privata sektorn medan ägar- och uppföljningsansvaret vilar på den offentliga sektorn.
- Det föreslagna kreditgarantisystemet bör vara fokuserat på samtliga små och medelstora företag, eftersom finansieringsproblemen i större utsträckning har visat sig vara kopplade till företagets storlek än till dess ålder (dvs. mer relaterade till brist på säkerhet än till brist på ”meritlista”).

Vi bedömer att ett nationellt kreditgarantisystem har potential att påverka cirka 2–6 procent av alla små och medelstora företag, och inom ramen för dessa en mycket högre andel av de tillväxtorienterade företagen.

1 What is a Loan Guarantee Scheme?

1.1 The Lending Process

A loan guarantee scheme (LGS), sometimes called a partial credit guarantee scheme (PCGS), is a debt policy instrument first and foremost. In the normal course of SME – banking relationships when an SME cannot fully finance its investment projects or day-to-day operations from internal funds (or less commonly equity), it approaches a private bank (typically the same bank it holds its transactional accounts with) to request a loan or a line of credit.¹ The majority of SMEs are successful with their loan applications under *normal* economic conditions, although a significant minority receive a lower amount than requested. This latter group are quantity (partially) rationed as opposed to absolutely rationed in the market. Within this group of partially and fully rationed firms are three important subsets of firms:

1. those with no track record
2. those with no, or not enough, tangible assets, and;
3. those with no track record and no, or not enough, tangible assets.

And these characteristics, track record and collateralisable assets are particularly important in the bank loan decision-making process, all acting to reduce the probability of a loan being offered. Recent evidence from the UK shows that these characteristics have become even more important in the banks' lending decision in the post-GFC period² (Cowling, Liu, and Ledger, 2012; Cowling et al, 2016; Cowling, Liu, and Zhang, 2016).

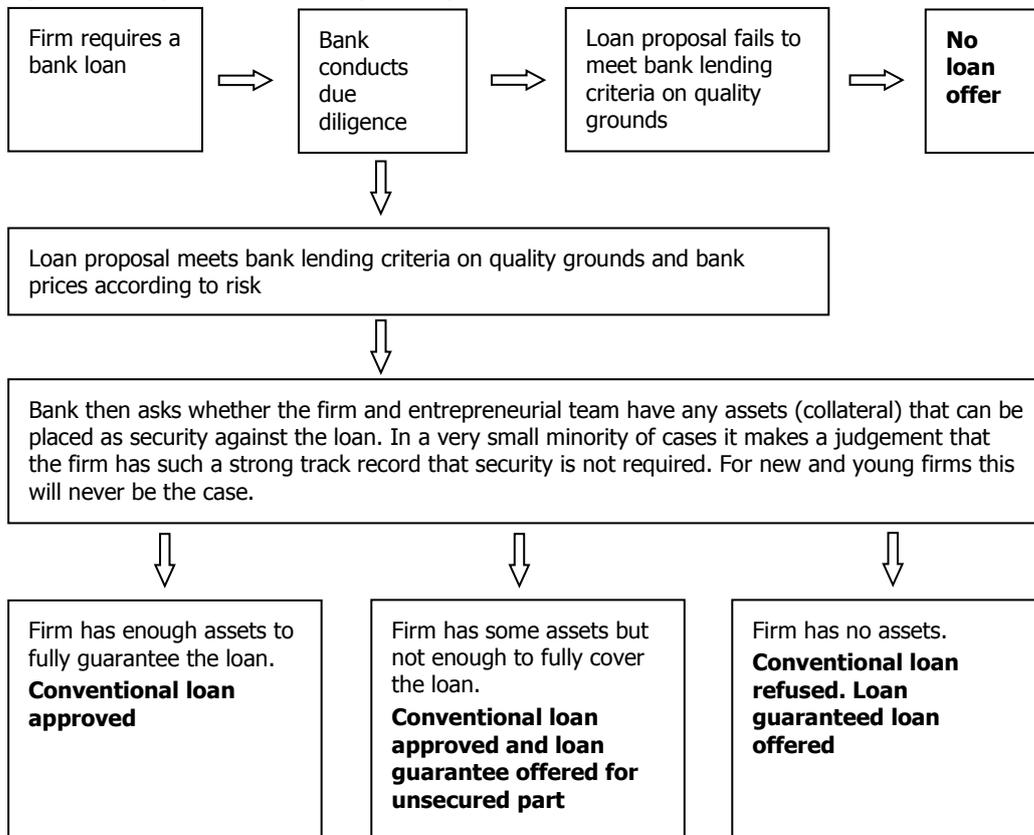
1.2 Why is Collateral So Important?

Why do banks prefer to lend only when collateral is available? Because it reduces the risk of lending under conditions of asymmetric information which we typically associate with younger and smaller firms. As it is likely that there exists within these groups of credit rationed firms some talented entrepreneurs with good investments proposals then not having enough collateral means that their investments go unfunded resulting in lower levels of economic activity and outcomes below the social optimum. And it is this feature of SME credit markets that creates a potential role for loan guarantee schemes. Figure 1.1 shows the general process adopted in many countries for accessing a loan guarantee when a conventional bank loan application is either fully or partially rationed.

¹ Small and medium-sized enterprises is abbreviated as SME.

² The Global Financial Crisis of 2007–2008 is abbreviated as GFC.

Figure 1.1 The process of accessing a loan guarantee



1.3 Core Elements of a Loan Guarantee

Thus the fundamental role of a loan guarantee scheme is to act as a third party guarantor for a viable lending proposition on behalf of the firm to the bank. This aspect is the ‘guarantee’. In one sense the public sector is acting as an insurance broker by insuring the lending bank against a proportion of the default cost should a loan not be fully repaid. But loan guarantee schemes also typically include other key features which can vary significantly across schemes according to the specific local context and target groups. The core parameters of a loan guarantee programme are;

- The level of guarantee (the per cent share of the outstanding debt that is covered by government in the event of default)
- The interest rate premium (the margin that the government receives for guaranteeing the loan)
- The maximum (and in some cases minimum) loan amount available
- The maximum (and in some cases minimum) loan term available
- The arrangement fee

So in return for the publicly provided guarantee which, in the event of loan default, represents a legal call on the guaranteed proportion of the outstanding share of the unpaid capital, many schemes charge an interest rate premium which is additional to that charged by the lending bank and is paid by the borrower firm to the guaranteeing agency. This is

similar to paying an insurance premium. In addition, the guaranteeing agency may charge an arrangement fee which is intended to cover its administration costs.

Aside from the more direct parameters, which largely mimic those that a private bank or insurer would impose, loan guarantee schemes have specific decision-rules relating to the maximum size of loan permissible under guarantee. This upper limit is determined by the unique characteristics of the relevant SME debt market and also by the maximum exposure that the public policy maker (or most commonly Treasury) is willing to tolerate. The imposition of a minimum, or lower, bound on guaranteed lending reflects several features of SME lending. Firstly, private banks typically have a decision rule not to take collateral on loans under a specified cash amount as asset (collateral) verification, and realisation in the event of default, is too costly for relatively trivial loans. Secondly, from the public policy-makers perspective, it is less likely that a trivial investment will generate the additional economic benefits desired. In short, the marginal benefit of guaranteeing lending is positive and increasing in investment (lending) scale (up to a point). Finally, the fact that a private bank refuses a loan request for a relatively small loan is often perceived to be a good proxy for a poor quality lending proposal.

The maximum, and in some cases minimum, term of loans available under guarantee also represent an interesting parameter on loan guarantee schemes. The perceived advantage of the public policy-maker over the private bank in this context relate to differences in the way expected future revenues arising from an investment are discounted. The private bank typically prefers short-term lending as its capital is paid down more quickly and its net exposure per period lower. But the public policy-maker may prefer longer-term lending as the societal gains may continue, or not be fully realised, into the medium-to-long-term.

Finally, the public policy-maker faces choices about what “types” of firms it wishes to support if it implements a loan guarantee scheme. Whilst most schemes exclude financial sector firms, those involved in gambling and other sectors perceived to be “morally bad” from a societal perspective, and in the EU agricultural firms, many schemes are also narrowly targeted at specific sub-groups of the population of firms, or indeed operate on a spatial level, as is also the case in many regions of the EU. But there is common agreement that younger and smaller firms are most likely to be credit rationed in the market, and for the most part loan guarantee schemes throughout the world reflect this view.

2 The Rationale for a Loan Guarantee Scheme?

Governments in more than one hundred countries across the developed and developing world operate loan guarantee schemes (often called partial credit guarantee schemes, PCGs) according to a review study by The World Bank (Beck, Klapper & Mendoza, 2008). The US was a first mover in providing this type of financial instrument in 1953, followed by Canada and Switzerland in 1961 and the UK in 1981. A recent ex-post evaluation of European Union Regional Development Funds and Cohesion Policy financial instruments (EU-Commission, 2016) found that 25 guarantee schemes to support lending to SMEs were active in the 9 European regions studied between 2007 and 2013, and more than 120 across the EU.

The pervasiveness of loan guarantee schemes as a primary instrument to promote SME lending implicitly assumes that there is a market failure in the provision of debt finance to SMEs, and, that by altering the risk-return payoff for private banks, private banks will increase their willingness to lend to informationally opaque and/or asset poor SMEs with viable funding proposals (Honohan, 2010; Cowling, 2010b; Cowling & Siepel, 2013). The key parameter in terms of changing the banks risk-return function is the coverage ratio, the proportion of the loan advanced by the private bank guaranteed by the government in the event of borrower default (Beck, Klapper & Mendoza, 2008; Cowling, 1995).

Across the seventy six guarantee schemes covered in the 2008 World Bank review, the median coverage (guarantee) ratio was 80 per cent. A later World Bank study of MENA countries³ (Saadani, Arvai & Rocha, 2010) found a slightly lower median guarantee of 75 per cent. The guarantee level ensures that part of the lending risk is shared by the bank thus increasing their incentives to properly conduct due diligence at the point of loan application and to monitor successful loan applications, both of which act to reduce expected losses arising from loan default.

So it is important to consider the theoretical and empirical basis for the prevalence throughout the world of publicly supported loan guarantee schemes. And in particular, why younger and smaller firms are often the target beneficiary group of loan guarantee schemes. Smaller firms are an important, often dominant, part of the sub-regional, regional and national economic systems that make up economies. In particular, they play a key role in promoting and stimulating economic dynamism, job creation, and growth through their contribution to innovation, competitiveness and productive ‘churn’. The ability of smaller firms to access finance is crucial in order that these firms can fund the level of investment that maximises their growth potential. Lack of finance not only reduces the rate of new business formation, but impedes the ability of existing firms to grow and can endanger their survival. Specifically, external finance is an important part of the market mechanism which facilitates the efficient allocation of resources within economic systems (BIS, 2012).

A perennial concern raised in the small business literature and in the wider public policy arena and debates is that capital market imperfections exist and limit the availability of finance to small firms (Laeven, 2003; Love 2003; Gelos and Werner, 2002). Beck and Demirguc-Kunt (2006) state that small firm financing obstacles have almost twice the effect on annual growth than large firm financing obstacles.

³ MENA = Middle East and North Africa.

In a recent study of SME growth dynamics over the course of the post-GFC economic recession, Cowling et al, (2015) observed that during the recession, it is access to financial resources rather than the more subjective measures of human capital that are more important determinants of recessionary growth, especially regarding sales. This suggests that in more stable economic environments many more firms are able to take advantage of general growth in demand without having to compete vigorously with other firms and entrepreneurs. Nevertheless, during a recession when the whole small business sector is further constrained by limited resource, only the entrepreneurs that have access to essential financial resources can manage to achieve growth.

Aside from this more general relationship between access to finance and firm growth, Ghosh, Mookherjee, and Ray, (2000) also contend that the availability of credit reduces the reluctance to adopt new technologies that raise mean income levels. Importantly, they also identify two types of credit rationing, micro and macro. The former refers to credit limits (amount) and the latter to loan denial. Importantly, the majority of research to date has considered macro level rationing (Cowling, 1997; Cowling, Liu, and Ledger, 2012), or absolute loan denial. Such concerns have led to the widespread use of loan guarantee programmes throughout the developed and developing world (Klapper, Laeven, and Rajan, 2006; Honohan, 2010). Almost without exception this type of intervention in the capital market has sought to provide loan security to smaller firms who would not otherwise be able to obtain debt finance through conventional means (Cowling and Siepel, 2013; Cowling, 2010b; Riding, 1997; Cowling and Clay, 1995).

Ensuring that smaller firms have access to adequate finance for investment and growth is an important priority for regional, national and supra-national policy-makers and this is reflected in current deliberations between policy-makers, smaller firm representative organisations and financiers, including banks and equity providers. And this belief was fundamental to the development of the JEREMIE programme initiated by the European Union in 2005 with the explicit aim to “promote increased access to finance for the development of SMEs”. It also played a prominent role in EU Cohesion Funds aimed at regional development over the period 2007–2013.

The fact that banks might not have funded all potentially profitable lending opportunities is particularly important for the credit rationing debate as when loan guarantee programmes exist and loans are advanced to small businesses, subsequent default represents what Åstebro & Bernhardt (2003) call a type 1 error. That is to say banks’ made the correct decision in the first instance not to lend to the firm in the absence of a loan guarantee scheme. This is the pre-loan issue classic adverse selection problem (Sharpe, 1990; Stiglitz and Weiss, 1981). By contrast, government backed loans which are successfully repaid would, in the absence of a guarantee scheme, represent a missed profitable lending opportunity for the bank. This would be termed a type 2 error. Missed profitable lending opportunities can also have wider effects on an individual bank’s profitability if a declined firm subsequently moves bank. This arises as the contribution of a customer firm to a banks’ profitability is heavily skewed towards non-lending related services.

If default increases as constrained firms become unconstrained via the loan guarantee, then banks are, under certain conditions, better off without a scheme. This occurs as loan guarantees raise the equilibrium price (via the government interest rate premium) and volume (number of loans and the total value of loans) traded in the market. This can lead to a situation where banks are lending at levels above their profit maximising level (Cressy, 1996; Devinney, 1986; Cowling, 2010b). And this is why the setting of the

guarantee level is so important in incentivising banks participation in guarantee schemes. Cowling and Yue (2016), in their estimation of the private banks profit function for UK government guaranteed loans, find that under the 75 per cent guarantee private participating banks made an average profit of 1.5 per cent per annum on their stock of loans under guarantee. This is below the conventional lending profit rate, but maintains the customer relationship and allows the bank to extract additional profit from the overall relationship.

The fact that not all potential entrepreneurs and/or small businesses get access to loans is a necessary, but not a sufficient condition, for justifying public intervention in credit markets.⁴ But this is often not well understood by entrepreneurs or policy-makers. However, since part of the remit of governments is to improve the social, as well as economic, welfare of citizens policy intervention can often be justified by taking into account socio-economic objectives. For example, banks and investors are not explicitly interested in job creation and local economic development per se, unless it leads directly to more deal flow, higher repayment rates or more profit.

But in a public policy cost-benefit analysis more jobs not only reduces social welfare payments (a cost saving to the state) but new employees pay taxes and stimulate consumption and aggregate demand. Further, higher employment rates, and local economic multipliers, are also associated with improved social outcomes such as lower crime, lower rates of multi-generational unemployment etc. And in a Swedish context, small firms employ a higher proportion of immigrants thus easing the transition into the labour market. There is also an issue of timing. Governments can often justify longer-term investments which take time to achieve their outcomes, as part of their remit is to promote and support economic and social development in areas of relative deprivation as is the case for EU Cohesion and regional development funding streams. And this takes time. But private investors and commercial lending institutions are only interested in purely economic investment returns and they always face short-term opportunity costs and pressure from shareholders to maximise short-run profits. Current capital adequacy requirements placed on banks in Europe under the Basle III agreement has placed further restrictions on the pool of funds available for lending.

⁴ This is true if need is assessed on purely economic grounds, although these constraints may be relaxed if schemes pursue an explicit social agenda.

3 The Design of Loan Guarantee Schemes

3.1 Easily understood parameters

One of the key success factors of loan guarantee programmes throughout the world is the simplicity of their basic parameters and the general level of flexibility that these parameters allow policy-makers to reshape or refocus programmes. The fact that commercial banks conduct due diligence (in most but not all cases) effectively transfers some of the downside risk back to banks, although the government clearly bears most of the default risk. Important in the Swedish context is that banks might become more willing to expand the supply of loans significantly when a large share of the outstanding loan is guaranteed and still not suffer from excessively high default rates. The core parameters of a loan guarantee programme are;

- The level of guarantee (the per cent share of the outstanding debt that is covered by government in the event of default)
- The interest rate premium (the margin that the government receives for guaranteeing the loan)
- The maximum (and in some cases minimum) loan amount available
- The maximum (and in some cases minimum) loan term available
- The arrangement fee

Importantly, these parameters are easily understood by most people who have ever taken out a personal or business loan and/or insurance. So loan guarantee schemes benefit from being simple to create and operationalize and also from being widely understood by all actors in the debt market. This helps avoid the problem of many complex government programmes which are only understood and accessed by those with the high level of awareness, skills, knowledge and resources to clear all the necessary hurdles and deal with the complexities of application. This is generally why smaller firms do not bid for government contracts and why in many cases scheme deadweight can often be high.

3.2 European Loan Guarantee Schemes in Design

Here we consider how the design of loan guarantee schemes can vary considerably across Europe and the world. The focus here is not only on the core parameters, but also on the practical features of schemes such as control and operational responsibility. Firstly, we consider basic scheme administration in terms of number of employees directly engaged. This is important as it represents a direct, and ongoing, cost of scheme provision. Figure 3.1 shows that there is considerable variation in the size of the scheme administrative team across European countries. The median administrative team in Europe is 21 people, with considerably smaller teams in Switzerland, UK, and the Netherlands and very large teams in Slovakia and France. As the administrative costs represent a cost that must be netted out of any formal economic cost benefit analysis, it follows that in countries with large administrative costs it becomes more difficult for schemes to generate positive net economic benefits.

Figure 3.1 Administration of European Loan Guarantee Schemes



Source: World Bank Partial Credit Guarantee Survey, 2007.

In terms of the type of guarantee system, Table 3.1 shows that half of all European schemes are publicly operated on a national basis. A further 35.7 per cent are operated via a mutual guarantee association (MGA). Publicly operated schemes may be operational at the local, regional, or national level as part of general SME policy, but may involve private sector (typically financial institutions) in their delivery. MGAs are collection or co-operative arrangements between independent businesses and/or their organisations that provide collective guarantees to loans issued to their members. These loans may also involve government support.

Table 3.1 Type of Guarantee Systems in Europe

Type of system	Per cent of countries	Examples
Publicly operated national scheme	50.0	Netherlands, UK
Mutual Guarantee System	35.7	Italy, Spain, Switzerland
Other	21.3	Greece
Total	100.0	

Source: World Bank Partial Credit Guarantee Survey, 2007.

In relation to the loan guarantee, Table 3.2 outlines the precise nature of the guarantee. First of all we note that in many European countries there are multiple types of guarantee available. The most common guarantee mechanism in Europe is a direct guarantee to a

bank. Where MGAs exist, the public either offers a counter-guarantee or a co-guarantee for the loan. Other form of guarantee provision are very rare.

Table 3.2 Type of Guarantee in Europe

Type of Guarantee	Per cent of countries	Examples
Direct to banks	66.7	Belgium, France, UK
Counter-guarantee to MGA	22.2	Italy, Netherlands, Portugal
Co-guarantee with MGA	16.7	Spain, France, Italy
Equity participation or participatory debt	5.6	Belgium
Other	5.6	Belgium

Source: World Bank Partial Credit Guarantee Survey, 2007.

Concerning the respective roles of government, banking regulatory agencies, financial institutions and other organisations in the funding, ownership, management, credit risk assessment, monitoring, and debt recovery, Table 3.3 highlights how these roles are allocated. In terms of funding, core government funding is the dominant means of funding guarantee schemes. This is also true in terms of scheme ownership. At the operational level, things change quite considerably. Here we note that financial institutions are the most commonly allocated the operational management responsibility, and are even more likely to be given responsibility for credit risk assessment. In contrast, central banks and their regulatory bodies are significantly involved in monitoring and debt recovery. So across Europe we see a fairly clear delineation of roles. There is high public involvement in funding and ownership of schemes, high financial institutional involvement in operational aspects of lending under guarantee, and high public banking agency involvement in overall monitoring of schemes.

Table 3.3 Loan Guarantee Scheme Responsibilities in Europe

	Funding	Ownership	Management	Credit risk assessment	Monitoring	Recovery
Government Agency	50.0	61.1	22.2	16.7	11.1	11.1
Financial Institution	33.3	16.7	33.3	44.4	33.3	33.3
Private company	16.7	16.7	16.7	22.2	22.2	22.2
NGO	5.6	5.6	11.1	5.6	5.6	5.6
Central Bank	0.0	0.0	0.0	5.6	33.3	33.3
Banking Supervisor	0.0	0.0	0.0	0.0	11.1	11.1

Source: World Bank Partial Credit Guarantee Survey, 2007.

Next we consider whether or not schemes apply specific eligibility restrictions, and if so, what the natures of these restrictions are. Table 3.4 outlines these details for European schemes. The most common form of eligibility restriction is for certain industry sectors to be included or excluded. In Europe this often reflects state aid restrictions. Spatial restrictions are also quite common reflecting the policy goals of economic development in economically disadvantaged regions and localities. Rather confusingly, some schemes are

restricted to existing firms only which goes against much of the evidence base relating to credit rationing being more acute amongst younger firms.

Table 3.4 Eligibility Restrictions in Europe

Restriction	Per cent of schemes
New businesses	11.1
Existing businesses	16.7
Sector	44.4
Spatial	16.7
Investment type	5.6

Source: World Bank Partial Credit Guarantee Survey, 2007.

Finally, we present evidence relating to the general parameters of loan guarantee schemes in Europe. Table 3.5 shows the means and medians for European guarantee schemes. We note that the guarantee coverage for most schemes is between 75 per cent and 80 per cent. This has a twofold purpose. It is high enough to incentivise banks to participate in the scheme, and it also leaves enough cash at risk to ensure that banks (or issuing agencies) conduct appropriate due diligence. The interest rate premium (over and above that charged by the lender) also serves two purposes. Firstly, it operates on a classic credit rationing theory basis which assumes that banks have a backward bending loan supply curve and choke-off lending at high interest rates. By providing a guarantee, and de-risking a loan to a lender, it becomes more willing to supply loans at de facto higher rates. Secondly, it allows the guarantee provider to generate a revenue stream to offset against future default costs and to cover ongoing administrative costs. In terms of lending terms, we note that most European schemes encourage longer-term lending. This has obvious advantages to the public policy maker in that it lowers the per period payments from firm to banks as the sum is spread over a longer repayment period thus reducing the burden on operating cash-flows, and it allows for more patient investments that private banks would not normally choose in the absence of guarantees. We also note that most guarantee schemes also have a fee structure associated with guaranteed lending. Here the most common forms are fees related to the amount under guarantee and fees charged on a per loan basis which replicates what private banks do when arranging loans or mortgages.

Table 3.5 Core Loan Guarantee Scheme Parameters in Europe

Scheme Parameter	Mean	Median
Guarantee Coverage per cent	78.8	80.0
Interest Premium per cent	3.73	2.00
Guarantee Term (years)	11	10
<i>Fee Structure</i>	per cent of schemes	
Annual fee	22.2	
Per loan fee	66.7	
Size of loan related	16.7	
Amount guaranteed related	55.6	
Risk adjusted	16.7	
Loan maturity related	22.2	

Source: World Bank Partial Credit Guarantee Survey, 2007.

3.2.1 Outcomes

Here we consider the empirical and evaluation evidence relating to loan guarantee schemes in order to establish whether they can meet their core objectives, and if so, under what circumstances, and for which firms. The evidence base is growing, but not as complete as we would require to make a comprehensive judgement on the generalizable efficacy of loan guarantee programmes as a policy instrument. Context is clearly important and the specific nature of spatial capital markets and scheme parameters have a decisive impact on the outcomes achieved. The first issue we concern ourselves with is finance additionality, or in North America incrementality.

Additionality – Here the most interesting evidence is from the UK schemes. Here three evaluations found that scheme additionality was increasing over time as the target groups became more focused and lending banks were subject to greater scrutiny. The 1999 UK evaluation (KPMG, 1999) estimated that 70 per cent of loans were additional in that firms could not have accessed any market based debt finance. This increased to 79 per cent in the 2010 UK evaluation (Cowling, 2010a), and 82 per cent in the 2013 UK evaluation (Allinson, Robson, and Stone, 2013). Comparable estimates for the Canadian scheme (Riding, Madill, and Haines, 2007) reported a figure of 74.8 per cent additionality. On the evidence available, it appears that schemes can address capital constraints for firms that are genuinely credit rationed in the market and that penalising errant lender behaviour encourages better scheme lending behaviours. This is supported by further evidence on the optimal credit guarantee ratio for South East Asian countries (Yoshino and Taghizadeh-Hesary, 2016) who found that if governments set a lower guarantee for lower quality banks then this encourages them to conduct more rigorous due diligence.⁵

Lower loan interest rates – Here we often view collateral and loan interest rates as a pair that are jointly determined. Although schemes typically charge a loan premium which goes to government, the actual loan interest rate is separately affected by the guarantee rate in a negative direction. Italian scheme estimates suggest that this effect is of the order of -0.45–0.87 per cent (D’Ignazio and Menon, 2012), similar in magnitude to the high-tech firm scheme effects reported by Cowling, Ughetto, and Lee, (2016). In this sense the guarantee not only improves access to finance for constrained firms but lowers the bank cost of lending.

Jobs – The evidence that is available to us suggests that guarantee schemes can be associated with net job creation is fairly strong. For the US, Brown and Earle (2016) find that the net cost per job created over two decades was US\$ 21,000 – 25,000, and that these effects were stronger for younger firms and when local credit conditions are weak.⁶ UK evidence found that net jobs cost averaged £5,500 - £10,000 per job created (Cowling, 2010a) and that on average each supported firm created 0.4 jobs per annum. However, a later evaluation reported a higher value of 0.96 net jobs per firm per annum (Allinson, Robson, and Stone, 2013). Both French (Lelarge, Sraer, and Thesmar, 2010) and Norwegian evidence (Pöyry, Damvad, and Agenda Kaupang, 2010) also supported the job creation success of guarantee schemes.

⁵ “Good” banks guarantee = 77.5 per cent and “bad” banks guarantee = 68.3 per cent.

⁶ When there is a dearth of local banks and lending institutions and more generally lack of investment capital available locally.

Default – UK estimates report 3 year loan default figures of 33.3 per cent for SFLG and 28.0 per cent for EFG (the newer scheme).⁷ The French scheme increased default by 6.2 percentage points compared to normal lending, and estimates for the Italian scheme suggest a 2.5 per cent increase in default. But, importantly, the costs of default were not proportional to the actual default rate. UK estimates show that default cost was only 17.2 per cent of total loan value which implies a net cost per recipient of only £5,000. This represents a benchmark against which the net benefits can be offset.

Growth – The research evidence on the effect of guarantee schemes is largely, but not completely, positive. The Italian scheme had no effect on real outcomes other than encouraging firms to shift to longer-term debt (Bartoli et al, 2011; Boschi, Girardi, and Ventura, 2014). In contrast, the French scheme had a 25 percentage point short-run growth effect and a 16 percentage point long-run growth effect (Lelarge, Sraer, and Thesmar, 2010). The specialist Norwegian innovative firm scheme found positive growth effects for value added, assets, and return on assets.⁸ More general UK schemes found evidence of sales, employment, and value added growth, alongside an increased propensity to export (Cowling, 2010a).

Net Cost-Benefit – The UK is the only scheme that has conducted serious economic cost-benefit analyses based on a full estimate of scheme costs (default calls) and premium income, and set against the growth of fully additional (i.e. only credit rationed firms) beneficiary firms, and also adjustments for the nature of jobs created and associated welfare savings. The most detailed estimate of the net economic benefit reported a figure of £1.05 per £1 net cost of the scheme (Cowling, 2010a). The later evaluation reported a higher net benefit but included ‘safeguarded’ jobs (Allinson, Robson, and Stone, 2013).

Private Banks – Cowling and Yue (2016) focused on the net returns to the private lending bank of operating a guarantee scheme. This is important as banks by implication raise the total volume of loans made by operating a scheme. They found that banks made a positive but low annual return (1.5 per cent on lending). But these guaranteed loans were part of a much larger bundle of “other” loans and these loans when taken as a whole, and when considered as an investment in a banking relationship, raised the total profitability of the customer firm to them.

⁷ The Enterprise Finance Guarantee (EFG) launched in January 2009. It replaced The Small Firms Loan Guarantee (SFLG) which launched in 1981. There are close points of similarity between EFG and SFLG.

⁸ Source: Not yet published article, peer-reviewed by me 2016.

4 Swedish SME Financing and Capital Markets in a European Context

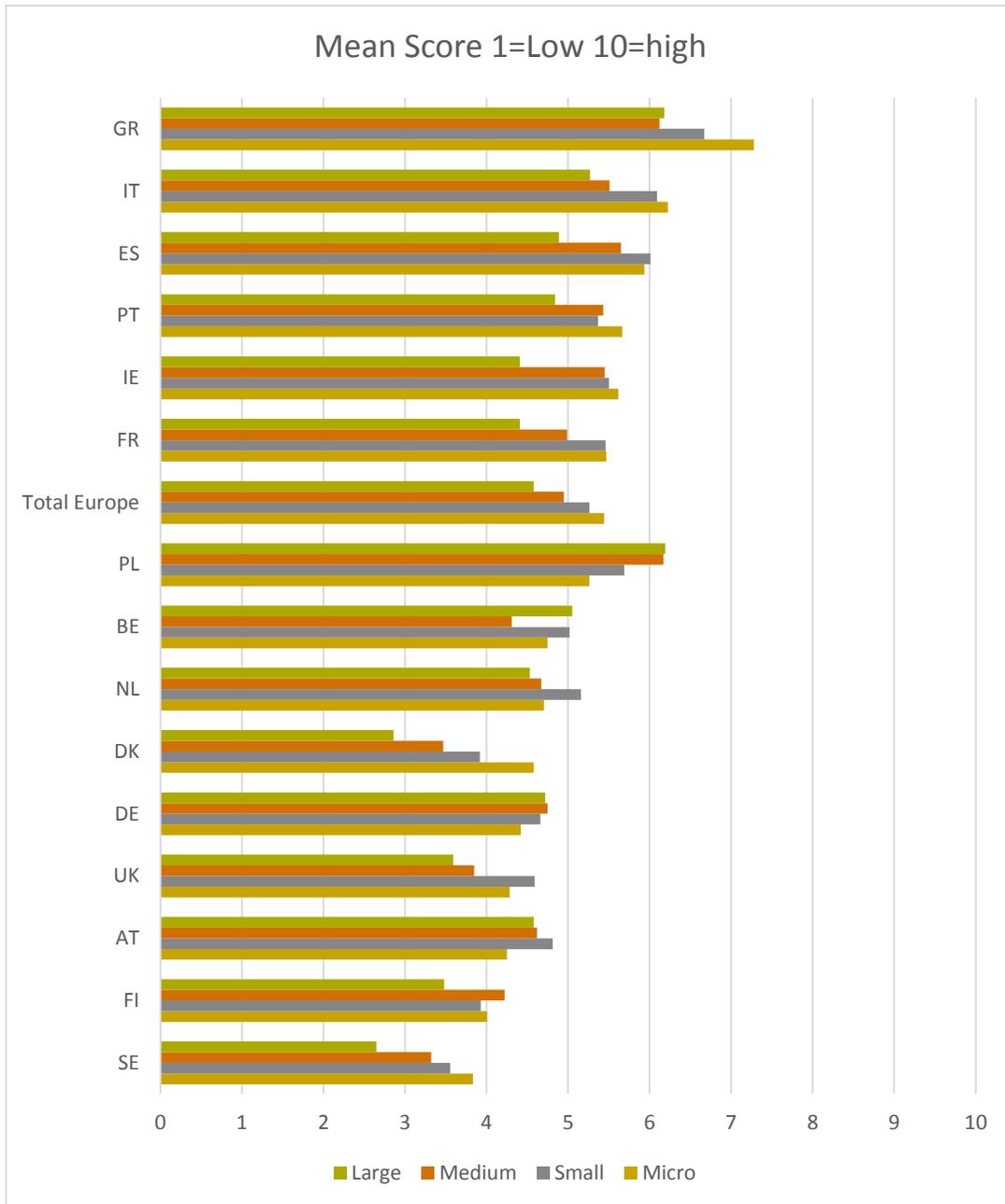
Here we consider initially key aspects of SME financing in Sweden including general patterns of firm capitalisation, relevance of particular sources of finance, access to capital issues, and patterns in the demand for bank loans and the willingness of banks to supply loan to SMEs. We then consider the nature and structure of capital market institutions as this has been shown to effect both the willingness of banks to supply loans to the SME sector and the price of credit when it is forthcoming.

4.1 Access to Finance as a Pressing Problem

Regarding general access to finance as a pressing problem for firms Figure 4.1 shows that Swedish firms on average are less likely to consider access to finance as a pressing problem than their European peers. But the mean scores for all Swedish SMEs (micro, small, and medium-sized firms) are above the ECB threshold of a mean score of 3 for a low order problem, which suggests that the problem is non-trivial for many SMEs in Sweden.

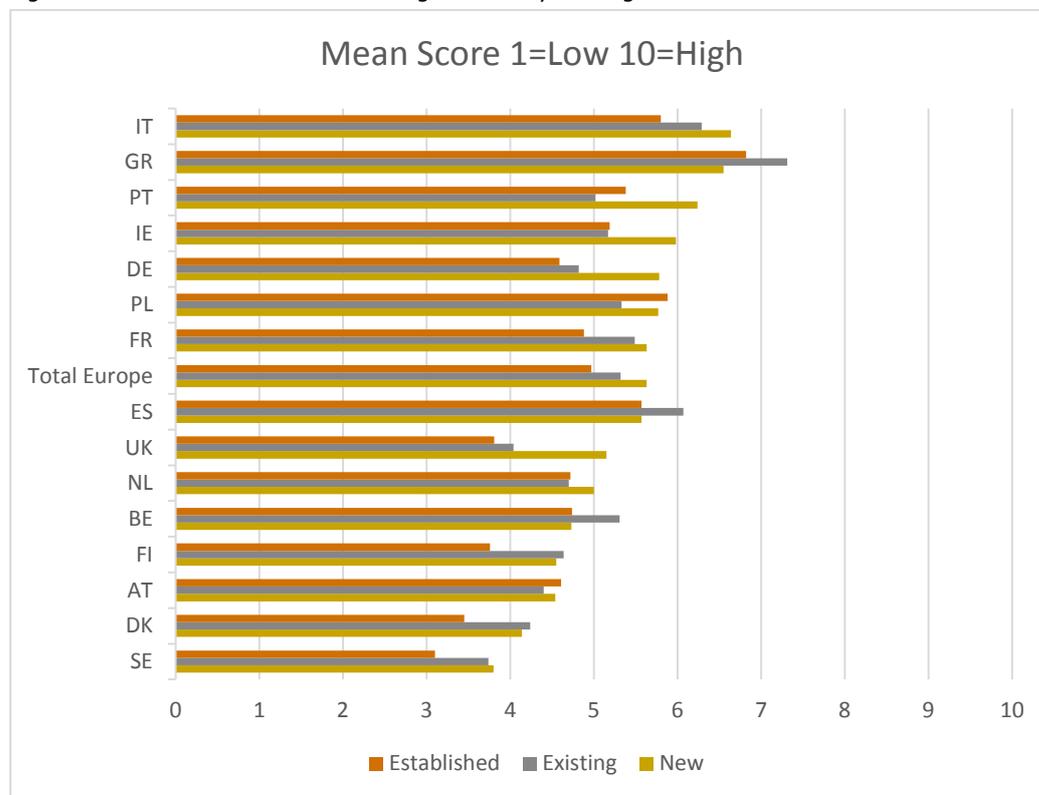
What is particularly interesting is when we consider the general pattern in means scores as we move up firm size classes from micro to large firms. In Europe as a whole the mean score for access to finance as a pressing problem declines by 16 basis points when we compare micro businesses with large firms. The decline for Swedish firms is 31 basis points, which is larger than the 19 basis point decline for France, but smaller than the 38 basis point decline for Denmark. Taken in context, access to finance is less of an issue in Sweden than is the case in many other European countries, but (a) it remains a non-trivial problem, and (b) it is more of a problem for the very smallest firms.

Figure 4.1 Access to Finance is a Pressing Problem by Firm Size



Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

Figure 4.2 Access to Finance is a Pressing Problem by Firm Age



Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

Focusing on firm age effects in terms of access to finance being a pressing problem, Figure 4.2 shows that Swedish firms are, on average, less likely to view access to finance as a pressing problem than their counterparts in other European countries. However, using a three group age classification (New = 0-2 years old, Existing = 3-9 years old, Established 10+ years old) we observe that established Swedish firms are much less likely to view access to finance as a pressing issue. Importantly, the decline in means scores between new Swedish firms and established firms is large at 18 basis points compared to 12 basis points for the whole of Europe. In Germany this decline is larger at 21 basis points, and in Denmark lower at 17 basis points. What is particularly interesting for Sweden is that the mean scores for new and existing firms are very similar, but we observe a very significant drop off in the order of the problem for firms of ten years and older. This feature probably reflects the risk of default for older firms being close to zero, even when they generate low profits.

Here we estimate a (robust) regression model, using the Swedish SME data from the ECB SAFE survey for the year 2014 (ECB, 2016), to seek to isolate the key determinants of how Swedish firms view access to finance as a pressing problem. The dependent variable is the firm level score on this measure (measured from 1 to 10 where 1 is the lowest score and 10 the highest. 10 would then indicate that access to finance is a very pressing problem) and the explanatory variables are firms size class, firm age band, and industry sector; see table 4.1.

Table 4.1 Estimating the Determinants of Access to Finance as a Pressing Problem for Swedish Firms, 2014

Access to finance a pressing problem	Coef.	Std. Err.	t	P> t	[95 per cent Conf.	Interval]
<i>Firm Size (ref=Micro)</i>						
Small	-0.208	0.229	-0.910	0.364	-0.656	0.241
Medium	-0.332	0.243	-1.370	0.172	-0.808	0.145
Large	-1.387	0.368	-3.760	0.000	-2.110	-0.664
<i>Firm Age (ref=New)</i>						
Existing	-0.070	0.334	-0.210	0.833	-0.726	0.585
Established	-0.491	0.263	-1.870	0.062	-1.007	0.025
<i>Industry Sector (ref= Industry⁹)</i>						
Construction	-0.424	0.317	-1.340	0.182	-1.046	0.198
Trade	-0.539	0.293	-1.840	0.066	-1.113	0.036
Services	-0.554	0.243	-2.280	0.023	-1.030	-0.077
Constant	4.262	0.324	13.160	0.000	3.626	4.898
N obs	933					
Significance	0.004					

Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

The model shows that large firms are significantly less likely to cite access to finance as a problem than all SMEs. The coefficient for large firms is large itself at -1.387 and highly significant. In contrast, firm age is not a particular point of differentiation. Here there is only a marginal reduction (at the 10 per cent level of significance) in the score for established firms compared to their younger counterparts. At the industry level, service sector firms, and, to a lesser degree trade firms, on average, have lower scores than industrial or construction firms, indicating lower levels of concern about access to finance. On this evidence, we might conclude that the most acute problems in Sweden around access to finance are likely to relate to SMEs per se, regardless of their age or sector. In addition, there is likely to be a distinct geographical dimension given the large economic disparities across (and within) the regions of Sweden.

The model above shows implicitly this is the total extent of under-funded firms, some of whom would benefit from a loan guarantee scheme which would improve their chances of securing finance by de-risking lending.

4.2 Financing Swedish Firms

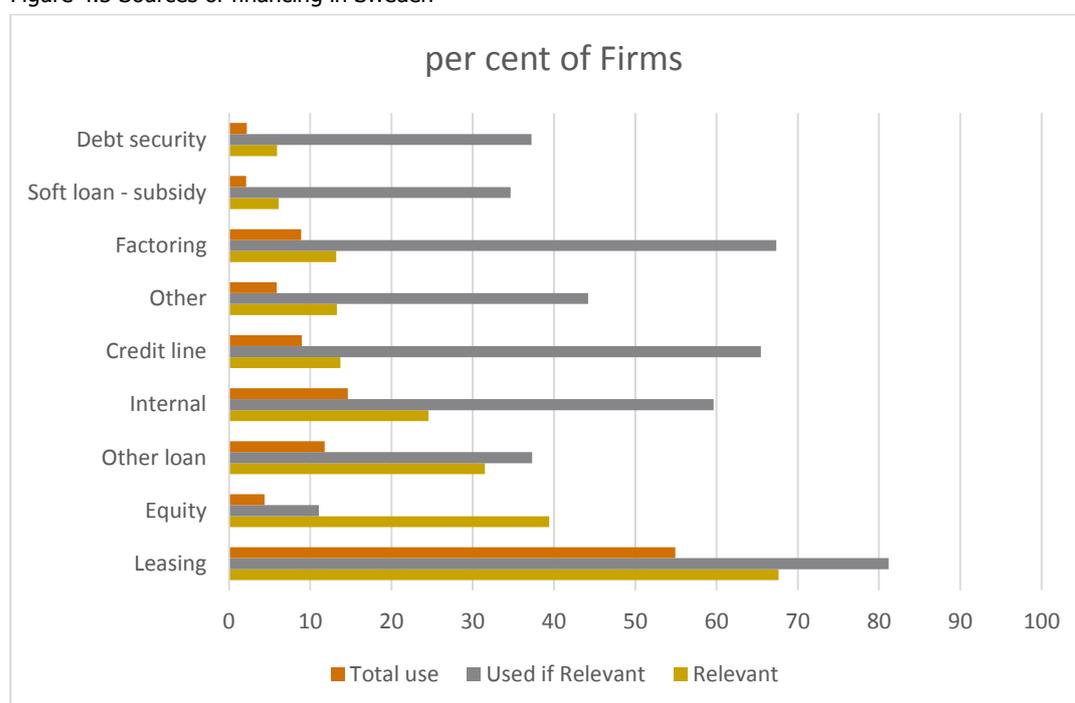
Here we explore what sources of finance are viewed as relevant to firms, and conditional on a specific source having relevance to a firm the extent to which that firm has actually used it.

In terms of which sources of finance are viewed as being relevant to firms in Sweden, Figure 4.3 shows that leasing, equity, term loans, and internal sources are perceived to

⁹ Primary industries and manufacturing.

have the most relevance to firms. This is indicative of the potential, or upper bound of, latent demand for specific sources of finance. But the figures for total use of each source of potential finance show a very different picture. Here leasing is used by 54.91 per cent of firms, internal finance by 14.63 per cent of firms, and term loans by 11.75 per cent of firms. Conditional on the firm perceiving a specific source of finance as being relevant to them, we find that take up of leasing is high at 81.19 per cent, factoring at 67.37 per cent, lines of credit at 65.44 per cent, and internal finance at 59.53 per cent. These leasing and factoring effects are consistent with the increased marketing of these financial products in Sweden by banks and newly formed financial actors in the market. Thus, and given financial preferences¹⁰, short-term debt sources appear to be the most utilised types of finance for Swedish firms.

Figure 4.3 Sources of financing in Sweden

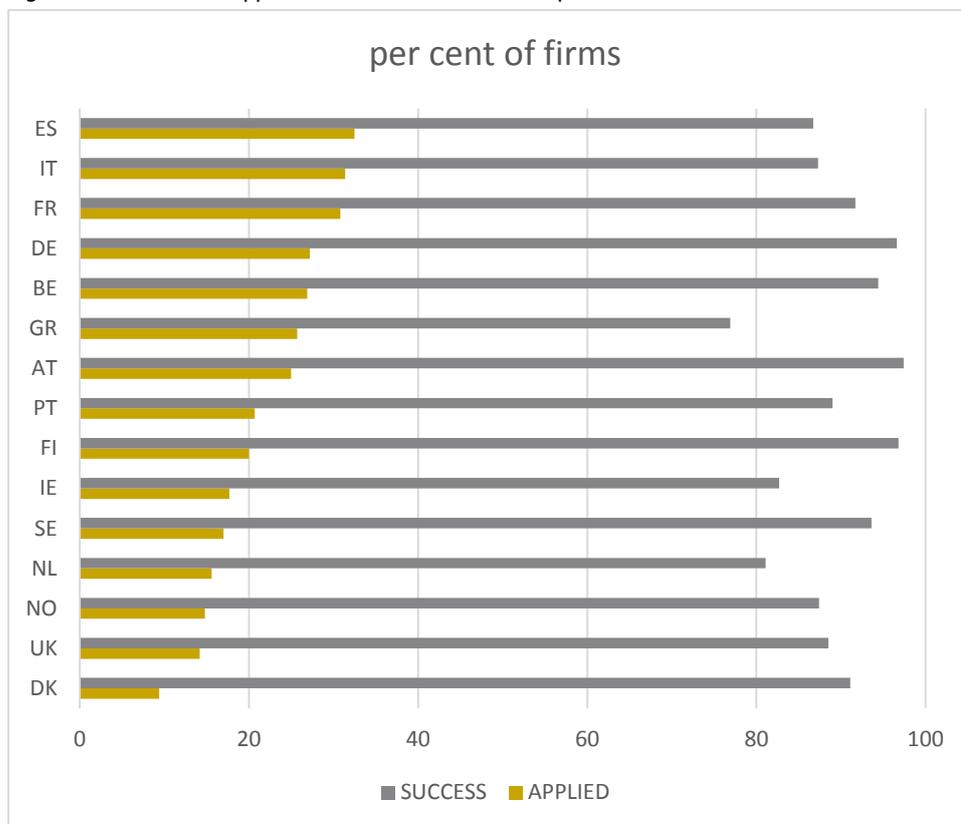


Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

In the context of public policy, and debt based financial instruments in particular, we note that soft loans and grants are perceived as being a relevant source of finance for 6.10 per cent of firms, of which 1/3rd take them up, which equates to 2.11 per cent of total firms. Further, we note that less than one in six firms who perceive internal finance as being a relevant means of financing their businesses actually used this form of finance. This might suggest that 4 in 10 of these firms (around 9.9 per cent of the total stock of firms) might be unable to self-finance their activities out of retained profits and cash reserves.

¹⁰ In theory, an individual can choose from a wide range of financial products (debt based and equity based). The preference here is for debt products and particularly ones with short repayment horizons.

Figure 4.4 Bank Loan Applications and Success in Europe



Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

Figure 4.4 shows the application rates across selected European countries for bank loans. Firms in Germany have a high rate of bank loan applications with 27.2 per cent of firms applying for loans, and in Finland a fairly high rate at 20.0 per cent. This compares to much lower rates in Sweden (17.0 per cent), and even lower rates in the UK (14.2 per cent) and Netherlands (15.6 per cent). Denmark had the lowest loan application rates at 9.4 per cent of firms. Conditional upon making a loan application, success rates vary substantially across Europe. In Germany, Denmark, Finland and Sweden, loan success rates were comparatively high with more than 9 out of every 10 applications successful. This compares to lower rates in Netherlands, Norway, and the UK where between 8 and 9 out of every 10 loan applications were successful. The Swedish rejection rates are reasonably consistent with the proportion of firms who considered soft loans to be a relevant source of finance for their businesses.

Table 4.2 Source of Last Loan Taken in Sweden

Source	per cent of firms
Bank	73.4
Private individual	3.7
Other sources (including government agencies and microfinance institutions)	21.6
Total	100.0

Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

A particularly interesting feature of business lending in Sweden is the comparatively low use of commercial banks for firms taking out loans (Table 4.2) despite the relatively high acceptance rates of banks for loan applications. This might suggest that certain types of firms self-screen themselves out of applying for bank loans when seeking external debt.

Table 4.3 Collateral Requirement Changes in Sweden

Collateral requirements	per cent of firms
Increased	24.7
Stayed the same	71.6
Decreased	3.7
Total	100.0

Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations

And this may, to a degree relate to the evidence in Table 4.3 which highlights the more onerous collateral requirements imposed by banks on lending. If the growth in firms' physical assets in Sweden was lower than the increase in banks collateral requirements, then firms that were previously unrationed and able to access bank loans would then become rationed due to insufficient collateral. And this would, given that 24.7 per cent of firms stated that this was the case, represent a *prima facie* case for a loan guarantee scheme.

Remaining on this financial constraint theme, we now consider how specific financial constraints may hinder firms wishing to finance their future growth. This is particularly important as SMEs are an important driver of economic growth and it is their ability to access funds for investment in growth that facilitates this. Table 4.4 shows that insufficient collateral is the single most important limitation for Swedish firms wishing to finance their future growth, affecting 1 in every 8 Swedish firms. In addition, absolute rationing in financial markets, and a lack of ability to self-finance, was cited by a further 9.5 per cent of firms.

Table 4.4 Financing Growth: The Most Important Limitation in Sweden

Limitation	per cent of firms
Insufficient collateral	12.7
Loan rates	6.2
No finance available	9.5
Loss of control	3.8
Bureaucracy	1.6
Other limitations	14.0
No obstacles	52.5

Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

Table 4.5 highlights the fact that guarantees are considered to be an issue of above average importance for the future financing of all businesses in Sweden.

Table 4.5 Guarantees Importance for Future Financing in Sweden (1-10 scale where 1=Low and 10=High)

Firm Size	Mean score
Micro	5.81
Small	6.20
Medium	6.08
Large	5.47
Total	5.83

Source: European Central Bank (ECB) SAFE Survey, 2009-2014. (ECB, 2016). Authors own calculations.

4.2.1 Swedish Policy Framework¹¹

ALMI is one of the government's tools at an operating level and is non-profit-making. ALMI Företagspartner is owned by the government and is the parent company of a group of 21 subsidiaries, which are 51 per cent owned by the parent company. Other owners are county councils, regional authorities and municipal cooperative bodies. The boards of the subsidiary companies comprise politicians, local business representatives, and organisations with links to the business sector. Operational activities are run by the regional companies.

ALMI's task is to promote the development of competitive small and medium-sized businesses as well as stimulating new enterprise with the aim of creating growth and innovation in the Swedish business sector. Its activities cover the whole process from concept to profitable business. The needs of its clients differ according to the stage they have reached in this process. Activities are therefore organised into three business areas based on the different needs of clients: Innovation, New Enterprises and Established Businesses. Within these areas, two principal services are offered: financing and, business development. What is unique about ALMI is this combination of financing and business development. The objective is to bring more innovative concepts to market successfully, to get more viable businesses launched and developed, and to increase the competitiveness and profitability of the businesses concerned.

For this report, the credit fund is of most relevance. The loan funds within the general credit fund have a wide coverage of the SME sector and there is co-operation with commercial banks to ensure that all lending is additional to that available on a commercial basis. Five loan products are offered which include: Business loans; Growth loans; Micro loans; Export loans, and; Innovation loans. Of the KrM 3,241 in loans issued in 2015, KrM 2,156 was distributed to micro businesses, KrM 896 to small firms, and KrM 189 to medium-sized firms. To this end, Almi is a major player in the small business loan market in Sweden and importantly is willing to take on more lending risk than commercial banks. The fact that ALMI has a higher tolerance for risk when lending compared to commercial banks means that it is lending to firms that are implicitly too risky for commercial lenders to make loans to. This feature of ALMI lending should ensure that finance is additional to that available in the market. This is a necessary but not a sufficient condition to alleviate genuine credit rationing in the market for SME finance.

¹¹ The section is based on information from Anna Hallberg, Executive Vice President Almi (PP-presentation sent by email the 14th of November, 2016) and from www.almi.se (16th of November, 2016).

Almi takes a typically Scandinavian approach to lending in that it operates directly in the market rather than as a guarantor or underwriter to commercial banks. This is unusual as it is an approach most commonly associated with developing countries. Setting this aside, Almi has a well-developed portfolio approach to assisting smaller businesses and correctly targets specific types of small business activity to support, for example exporters or those entering a growth phase. This is consistent with ensuring that value creating small businesses get the best assistance they can. But loan guarantees are a far more simple instrument in that they have a single goal which is to get debt capital to firms with good investment opportunities that cannot access capital because they are too young and/or have no collateral assets. This can affect all small businesses at various stages in their lives regardless of whether they fit into a pre-determined policy target group. Implicitly, loan guarantees are often successful because they create value in aggregate through the sheer volume of smaller businesses they support not through the spectacular growth or achievements of individual firms.

5 The Practical Design of a Loan Guarantee Scheme

5.1 Critical indicators of the need for loan guarantee programmes

So far we have considered why credit may be rationed to smaller firms, and which firms are most likely to face severe problems with accessing debt finance from conventional sources, and how European policy makers have designed loan guarantee schemes. Now we are going to outline the critical indicators that policy-makers might consider when assessing the specific need for policy intervention in the form of loan guarantee type programmes. From Cowling (2012) these have been identified as:

- A highly concentrated banking sector (few large banks).
 - × Sweden has a 5-firm banking concentration ratio of 60.7 which is far higher than Germany at 25.0 and the UK at 40.8, but below Denmark at 64.0 and the Netherlands at 85.0
- Less dense local branch networks and a general lack of relationship banking.
 - × The UK has 389 credit institutions who operate 12,360 branches compared to Sweden with 180 credit institutions and 2,147 branches and Denmark with 164 credit institutions and 1,996 branches. Germany has 1,948 credit institutions and 39,411 branches. Both Denmark and Germany have more credit institutions branches per head of population than Sweden.
- Low levels of housing or general (tangible) asset ownership.
 - × Sweden has a relatively high level of home ownership at 69.3 per cent which compares to 67.0 per cent in the Netherlands, 64.8 per cent in the UK and 63.3 per cent in Denmark. The Swedish problem is that home ownership is unevenly distributed amongst the population due to an under-supply of housing and the huge growth in house prices which has excluded particular groups of the population from becoming home owners. Thus housing wealth has become more concentrated. There is an additional issue relating to the fact that a substantial amount of home ownership is apartments which are collectively owned by an association which might restrict the owners from using their property as collateral. Overlaid on top of this is the regulated rental market that creates immobility in the market. The market value of housing also differs greatly between different parts of Sweden, from very high levels in the major cities to particularly low values, primarily in the inland of northern Sweden.
- Most commercial loans require assets to be placed as security.
 - × Collateral is viewed as an issue of major importance by Swedish businesses seeking to finance their growth through external debt and Swedish firms report that collateral requirements have become more onerous since the GFC.
- A diverse entrepreneurial, and latent entrepreneur, population (poor as well as rich potential entrepreneurs).

- × It is always likely to be the case that home and physical asset ownership and general wealth and savings are more concentrated than entrepreneurial talent. This is because asset ownership, wealth, and savings typically relate to (a) inheritance, and, (b) wage and salary incomes. The latter in particular is associated, on average, with formal education measures of human capital which are different from that of entrepreneurial human capital. The former also has a unique spatial element to it. Heritage in this context is what the entrepreneur's parents did and how much wealth they accumulated and passed on to him/her (the inheritance). This has nothing to do with the skills or talents of the entrepreneur.
- Access to loans is conditional on criteria not related to the quality of the entrepreneur of their investment proposal (e.g. collateral availability).
 - × Collateral is viewed as an issue of major importance by Swedish businesses seeking to finance their growth through external debt and Swedish firms report that collateral requirements have become more onerous since the GFC.
- The spread of interest rates on bank loans is narrow (indicating rationing is favoured over risk-adjusted lending).
 - × Lines of credit in Sweden average around 4 per cent and the upper bound is around 8 per cent. This might suggest that Swedish banks have a backward bending supply curve and choke off lending at quite modest rates.
- There is substantial diversity in the relative quality of lending institutions.
 - × Here, we suggest that 'good' and 'bad' banks exist and that banks that are inefficient processors of information are more likely to make Type II (and Type I) errors in their lending decisions.

5.2 Scale of loan guarantee programme and its determinants

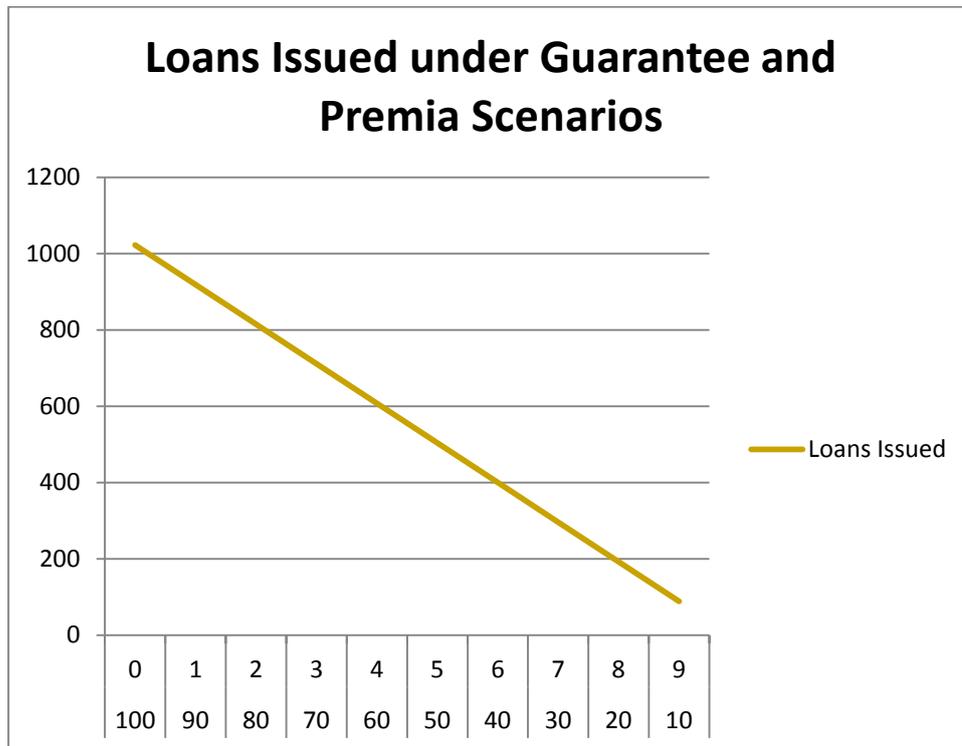
When considering the actual parameters of a new loan guarantee scheme, we need to consider how both lending banks and smaller firms will react to (a) the level of guarantee and, (b) the premium. Banks willingness to advance loans under a loan guarantee scheme, previous research has shown, is substantially affected by the level of the guarantee provided by government. Equally, as the premium level adds to the total cost of debt both banks and firms will take this (additional) cost into account when deciding whether the proposed investment can generate the level of future cash flow capable of servicing the capital and interest payments.

Importantly, the actual cash volumes that flow to government from the loan guarantee premia are relatively small compared to the costs of defaulting loans. But the micro level operation of a loan guarantee scheme cannot be treated in isolation and wider macroeconomic circumstances need to be considered. Previous research has also established the general relationship between (real) GDP growth (from trend levels) and loan guarantee backed loans issued, using evidence for the UK scheme, and found a significant and negative relationship (see Cowling, 1995). This occurs as banks tighten their credit conditions when economic conditions deteriorate and it becomes increasingly difficult for firms to meet their collateral conditions, particularly when asset prices are falling.

If we focus on a feasible range then with an economy expanding at 1 per cent above trend levels would result in a decline in number of loan guarantee total loans issued of 12.5 per cent, holding other macroeconomic factors constant and maintaining the loan guarantee

parameters at their starting levels. The implied relationship is linear thus an economy expanding at 3 per cent above trend levels would be associated with a decline in total loan guarantee loan volumes of around 37.5 per cent. Equally, if we allow for scenarios where an economy is experiencing a below trend growth rate of real GDP then we would expect an expansion in loan guarantee volume of loans issued. For policy-makers this is a key element of the planning process when designing and managing a loan guarantee scheme as the level of loan guarantee loans offered is a key indicator of the subsequent cash demands on the Treasury arising from future default calls. This macroeconomic effect is also a major reason why governments across the world favour the introduction or expansion of loan guarantee schemes in periods of economic crisis.

Figure 5.1 Loan guarantee level and interest rate premium effects on loans issued



Source: Cowling (1995)

Figure 5.1 illustrates how potential combinations of guarantee levels and interest premia impact on the total volume of loans issued under a loan guarantee scheme. On the horizontal scale we have a (hypothetical) scheme where the government guarantees 100 per cent of the loan and sets its interest premium to zero. We then have (moving right along the horizontal axis) a rising interest premium and a declining level of guarantee. Thus as we move right along this axis a loan costs the firm more and the banks' exposure in the event of default increases. Thus as we move right along the axis a loan guarantee scheme becomes less favourable to both parties to the lending contract. Most schemes operated in developed countries would be in the 70 per cent-80 per cent guarantee and 2 per cent-3 per cent interest premia range historically. This should ensure that only good quality lending propositions are funded as the bank bears enough risk to conduct due diligence. This ensures that loans that are made have a higher probability of being additional to those that would have been made.

Thus if we begin with a notional 800 loan guarantee backed loans issued at commonly used parameter ranges, then we observe that a rise in the interest premium to 4 per cent (from 2 per cent) and a decline in the guarantee level to 60 per cent (from 80 per cent) would see the total volume of loan guarantee backed loans issued fall by around 25 per cent (from 800 to 600). If we consider that a loan guarantee scheme has a minimum required level of activity to justify the need for it to be in place in the first instance, and to cover the fixed costs of operation and management, then in this hypothetical scenario any combinations of guarantee and interest premia that result in the total volume of loans issued falling below 400 would be in an unfeasible range. Here any guarantee level below 50 per cent and an interest premium above 5 per cent would trigger this unfeasible scenario. Policy-makers when designing a new scheme, or adjusting an existing one, need to consider beforehand both bank sensitivity to the guarantee level and firms sensitivity to the interest premium in particular. Equally, an estimate of the potential scale of latent or unmet demand for loans and the economic costs of unfunded investments should inform judgements on the feasible operational scale of a scheme and the resources required to administer and deliver a scheme at the desired scale.

Figure 5.2 Loan guarantee demand and supply and total loan interest rates

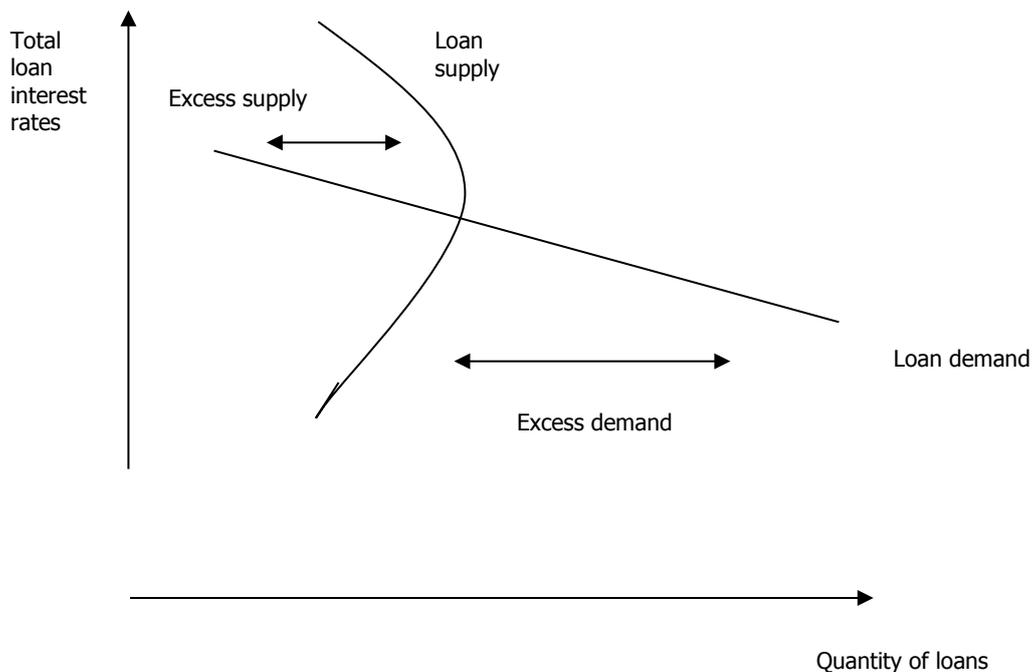


Figure 5.2 shows the general shape of the banks’ loan guarantee supply curve and the small firms loan guarantee demand curve in terms of the total cost of lending based on UK loan guarantee scheme analysis (Cowling, 2010a). Bearing in mind that the loan guarantee scheme interest premium is around 2 per cent over and above that charged by banks it is interesting to note that the *small firm demand curve* is relatively insensitive to the total interest rate (i.e. it declines relatively slowly as total debt costs rise). For the UK, loan demand is choked-off completely at total loan interest rates above 12 per cent. This is in a world where, at the time, base rates were 4 per cent, and bank interest margins were 2 per cent–3 per cent. If total lending rates had fallen then the volume of loans demanded would increase in a steady and linear way. This is expected as more potential investment projects can generate the level of returns (and cash) to service a lower interest rate repayment.

From this, we can assume that any changes to one or all of the components of the total loan interest rate offered (bank base rate, bank margin and loan guarantee premium) would result in a change in the level of demand for loans from small firms.

On the nature of banks willingness to offer loans at various interest rates, we observe that the *supply curve* is backward bending at high (and low) interest rates. This former is due to banks unwillingness to offer high interest rate loans as this type of loan is typically associated with higher risk projects (i.e. only high risk-high return investments can generate the type of returns necessary to service the loan). Thus the bank chokes off its supply of loans at high interest rates as it suffers from higher default and lower profits. Remember that this is analysis is for loan guarantee backed lending, so even under this regime banks choke off the flow of credit as they are still exposed to 20 per cent-25 per cent of the total outstanding loan in the event of default. So, even a scheme designed to eliminate credit rationing has feasible limits.

At total lending rates below base rates plus 3 per cent there is *excess demand* for loan guarantee backed loans as banks are reluctant to lend at low rates as profits decline but small firms have an increasing number of viable projects. On the bank side, this relates to the relative profitability of alternative investments. The interesting feature of the loan guarantee debt market is that even with a backward bending supply curve as banks become increasingly reluctant to offer high interest rate loans (even with a 75 per cent government guarantee), the willingness of small firms to accept such high interest rate loans diminishes at an even faster rate leading to a situation of *excess supply* of loan guarantee backed loans. Taken together, these two features of the loan guarantee market suggest that the government has a quite small range of feasible interest premia unless other price components of the total lending cost change.

5.3 Lending scale and loan terms

A clear advantage that a government backed loan guarantee programme has is that the government can take a longer (and broader) view in terms of the timing and nature of its' investments. Economic evaluations of government supported financial programmes suggest that the full economic benefits of new investments can take up to six years to fully accumulate. This is important as the costs of many schemes are incurred early on in the investment process, and in particular 80 per cent of defaulting loans do so within 2 years of the loan being made. A failure to accommodate these facts can result in evaluations being conducted too early in the investment cycle and erroneous (and negative) conclusions being drawn. This is known as the J-curve effect where firm performance dips in the immediate post-investment period as firms re-configure themselves in order to accommodate future growth episodes. Once these intra-firm changes have bedded in, performance increases.

What is clear is that loan guarantee schemes have generally promoted longer-term lending (typically up to 10 years) and a wider distribution of loan terms than is the case for the stock of conventional bank loans. Thus, more patient investments and less onerous per period capital repayments have been supported. Equally, loan guarantee programmes have also been associated with a larger scale (loan size) than would be found in a portfolio of conventional bank loans. The 'typical' UK loan guarantee backed loan would equate to around SEK1m under the original SFLG scheme before it was broadened and re-branded as the EFG. Importantly, a recommendation of the 1999 UK SFLG evaluation (KPMG, 1999) was that shorter-term, smaller value, loans for working capital purposes should be

excluded as there are other mechanisms by which temporary cash-flow issues can be addressed (see the UK Transitional Loan Fund¹²).

5.4 Resource allocation and programme design

Having established the general capital market conditions under which the provision of a loan guarantee scheme would be an appropriate policy intervention, we now move on to consider the more practical aspects of programme provision.

Feasibility study – conduct a feasibility study to establish the scale of latent demand for a loan guarantee programme amongst SMEs and the nature of finance constrained firms and latent entrepreneurs. Analysis of SME loan defaults will also help inform likely longer-term default effects and costs. This will also shape and inform the nature of the schemes core parameters

Staffing – a core administration team to validate and process loan guarantee scheme applications (using a pro forma template) and maintain a Management Information System

MIS – design and construct an MIS capable of recording applications and collating firm and loan level data. This would also support subsequent evaluations and annual scheme reporting

Evaluation – agree appropriate evaluation timings and allocate a fixed budget for this. Determine how performance will be measured in future evaluations and build this into the routine MIS data collection process

Treasury calls – set up a legal system whereby commercial banks can put claims directly to the Treasury if a guaranteed loan is in legal default

Eligible banks – set the conditions under which a commercial bank can issue loans under the government guarantee and a system of performance review

Exclusions – aside from the normal gambling, finance sector, and illegal business activities, many loan guarantee schemes have excluded particular sectors of the economy, primarily for high displacement and low additionality reasons (e.g. the UK used to exclude high street retail). The precise nature of these exclusions would be informed by the feasibility study. And spatial considerations could also be an important parameter in the Swedish context.

Scheme parameters – the specific scale and scope of the core parameters (the premium, level of guarantee, minimum and maximum loan term and size) will be informed by the feasibility study analysis of SME credit markets. A judgement should be made, and informed by SME loan default analysis, on the effects of setting specific parameters and its' subsequent impact on loan default

Using data and wider evidence from the well-established UK loan guarantee schemes (both EFG and SFLG) to predict a feasible scale of operation of a Swedish guarantee scheme, we observe that;

- In total 34 lending institutions currently are eligible to issue loans with a government backed guarantee in the UK. These include, 12 National banks, 17 regional banks and finance institutions, and 5 factoring and asset finance houses. Importantly, 83 per cent

¹² This was a temporary scheme which was initiated at the onset of the financial crisis in 2008 and ran for 12 months. It supported working capital investments for established SMEs with liquidity problems due to the crisis.

of the total numbers of guaranteed loans issued to SMEs are made by the big-4 national banks. Thus, in a Swedish context bringing the big banks on board would be critical for the establishment of a Swedish loan guarantee scheme. Sweden has around half of the number of credit institutions that the UK has and a more concentrated banking market. Implicitly, the core big Swedish banks and a representative collection of at least ten smaller credit institutions would appear to be appropriate.

- In total government guaranteed loans account for between 1 per cent and 2 per cent of total lending in the UK to SMEs. In a Swedish context, and adjusting for the approximate number of SMEs (1m) and the proportion seeking to borrow in a given year (17 per cent) and the proportion of rejected loan applications (6.4 per cent) this would equate to a maximum of 10,880 loans per annum. But this figure needs to exclude (net out) poor quality applicants and add in firms who had some, but not all, of their loan requirements met (quantity rationed firms with viable lending propositions).
- The estimated governmental cost of scheme administration (including staff, equipment, building etc.) is SEK 55,000 per loan issued over the life cycle of an individual loan.
- Legal recovery of assets relating to loans in default typically takes 322 days from the initial point of default.
- The borrower is responsible for repayment of 100 per cent of the EFG facility, not just the 25 per cent outside the coverage of the government guarantee. Where defaults occur, the lender is obliged to follow their standard commercial recovery procedure, including the realisation of security, before they can make a claim against the government guarantee.
- Under EFG, lenders are expressly prohibited from taking a charge over a principal private residence as security against an EFG loan.
- Under EFG, lenders are entitled to take security, including personal guarantees. This is standard commercial practice and an established mechanism for ensuring a degree of personal commitment to repayment of the loan by the business. In EFG this means there is a three-way risk sharing between borrower, lender and the government.

6 Conclusion

We began by discussing the theoretical background to the phenomenon of credit rationing and how it may manifest itself in debt markets relevant to smaller firms. We then discussed the wider economic implications of smaller firms not being able to fund investment opportunities from external debt markets. Drawing upon a wide range of empirical evidence we then identified particular problems that smaller firms have in accessing debt capital from commercial banks and how publicly supported loan guarantee programmes might act to redress market failures where and when they exist. Further thought was given to identifying specific institutional, economic and market conditions which are most typically associated with need for a corrective loan guarantee programme and the benefits that have been found to be associated with guaranteeing smaller firm loans through the commercial bank channel.

Broadly speaking, the evidence suggests that credit rationing of good quality, low risk, smaller firms is a small, but not insignificant feature of credit markets in most developed countries. And loan guarantee programmes, when appropriately designed and administered, are capable of delivering value-for-money for the tax payers dollar through their support for employment growth, productivity, innovation and exporting.

Then the focus of discussion narrowed to consider the nature of credit markets in Sweden. This is important as all these factors help determine the need for a loan guarantee programme in the first instance, and secondly the specific type of programme that might be most appropriate in a Swedish context. Drawing on experiences of programmes available throughout Europe, core issues surrounding the design and development of loan guarantee programmes were then discussed. Specific attention was paid to establishing what the effect of setting different parameters of a loan guarantee programme might be, and identifying a feasible range of the core parameters that such a scheme might operate within.

We conclude that there is a case for the design and implementation of a loan guarantee programme in Sweden to correct for the specific problems of smaller firms being unable to finance new investment opportunities through normal commercial bank channels. But the specific scale of potential programme demand needs to be established in a detailed feasibility study as this determines the scale of the initial and ongoing demands on the Treasury.

Further, more detail is required on:

- a) the specific characteristics of credit rationed smaller firms in Sweden, and
- b) the specific characteristics of smaller firms capable of generating the highest value added when unconstrained in debt markets, and
- c) the scale of unmet loan demand, and, (d) the geography of entrepreneurial activity and collateral constraints . This would then help determine the actual values of the key programme parameters (level of guarantee, interest rate premium, loan term and loan size).

Finally, in terms of opening up the debate on the appropriateness of a potential new financial policy instrument in Sweden, there are broader avenues of exploration that would underpin policy deliberations. For example, a wider view of current policy interventions in this area and the rationale behind the status quo. Equally, the role of public institutions in the design and particularly delivery of financial policy instruments must be considered. This is especially relevant given the general shift in many countries towards co-funding

arrangements and public-private hybrid schemes. Further, policy-makers must consider what their real objectives are. Purely economic? Socio-economic? Or developmental in the context of improving the economic outcomes of underperforming regions? This aspect is particularly interesting in Sweden given its fairly unique geography and population distribution.

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