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Estimating the financing gap of SMEs

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Estimating the Financing Gap of Small and Medium-Sized Enterprises

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Abstract

Using a novel methodology, we estimate the gap between supply and demand financing of small and medium-sized enterprise (SME) financing in several European countries. We find the largest loan gap spreads are in Poland and the Netherlands. Specifically, our results show the upper boundary of the loan gap is the lowest in Romania and the highest in the Netherlands. Moreover, the lowest lower boundary of the equity gap is in the Netherlands, while the highest lower boundary is in Romania. Overall, our results suggest that there is a significant difference between the estimated demand and supply of equity, which is on average 3% of GDP.

Introduction

Small and medium-sized enterprises (SMEs) with fewer than 250 employees are im portant players in all sectors of the economy. In Europe, there are more than 21 million companies in the SME sector, with almost 90 million individuals employed. While SMEs contribute significantly to total job creation, they constitute a small proportion of employers. Yet the percentage of employed persons working for SMEs in Europe lies between 60% and 70%.

The SME sector is, thus, significant for both economic growth and employment, which implies that when the SME sector is negatively affected, economic growth and employment suffer. Relative to larger firms in the economy, the SME sector is extremely sensitive to external market shocks: severe economic conditions or changes in economic regulations. Some of the main causes of higher sensitivity are risks associated with small-scale businesses, lack of experience, low productivity, a primary focus on local markets, and the naturally high rate of bankruptcies. Moreover, a direct consequence of higher sensitivity to external market shocks is limited access to short- and long-term financing. However, the data show that, in the presence of increasing unemployment in the period between 2008 and 2013, the share of employees in the SME sector increased relative to other sectors in the economy in five European countries: France, Germany, the Netherlands, Poland and Romania (Research Countries) (Annex 3). This observation implies that SME sector employment is more resilient to external shocks in the economy, further emphasizing the urgency to fulfill the SME sector's demand for access to free cash flow and credit. The SME sector's contributions to job creation, innovation, economic growth, and employment resilience in the presence of external shocks are all important reasons for further investigating the financing constraints affecting the sector.

SMEs are particularly dependent on credit and cash flow, but they confront numerous obstacles to borrowing funds because they are small, less diversified, and have weaker financial structures. Indications that SMEs are financially constrained are: payment delays on receivables; declining liquidity; and an increase in SME insolvencies and bankruptcies. Besides the market signals that make SME sector firms unfavorable borrowers, firms find it difficult to provide high-quality collateral at all times or to insure transparency with respect to their creditworthiness (Ayadi and Gadi, 2013).

In recent years, policymakers and researchers have increasingly begun to explore the differences in SME lending across countries and bank ownership types (IFC, 2010). While the literature has devoted considerable attention on the impact of the differences in institutional and organizational structures and the pricing of bank financing to SMEs, researchers have rarely focused on the differences between the supply and demand of financing to SMEs to determine whether a financing gap exists in debt and equity markets (OECD, 2015). This suggests that there is little evidence on the size of the financing gap in the debt and equity markets. Our study is the first pan-European study of its kind to estimate the differences between supply and demand of SME financing in order to quantify the financing gap in five European countries.

In this paper, we rely on the methods of the European Investment Bank (EIB) (2013) study, but expand it in several dimensions. First, we estimate supply and demand using different sources of data in order to provide a full overview of the currently available data on SME financing supply. Second, we apply different methods in order to estimate the financing demand. These different methods help us to avoid the sample selection issue that the EIB study suffers from. Specifically, the EIB study estimates the average loan demanded by observing only a sample of the loans that were obtained. We then correct for this issue and include different sizes of obtained versus requested loans. In addition, we calculate the loan demand of those firms that applied but were rejected for a loan. Finally, our study focuses on a different set of European countries.

In order to provide context to our analysis, we compare the estimates across the five countries with the SME loan and financing gap in the US. While not approaching pre-crisis levels, we find that the credit conditions for US SMEs are better than for EU SMEs. Moreover, the EU and the US have similar institutions and market structures, which makes policy recommendations easier to benchmark. To estimate the SME loan and equity gap in the US, we rely on publicly available data and published studies.

We find that the US loan gap ranges from 1.12% to 2.25% of GDP. The largest loan gap spreads are in Poland and the Netherlands. The upper boundary of the loan gap is the lowest in Romania and the highest in the Netherlands. Regarding the equity gap, we find that the US gap ranges from 0.96% to 1.52% of GDP. The lowest lower boundary of the equity gap is in the Netherlands, while the highest lower boundary is in Romania. The estimated equity gaps suggest that there is a significant difference between the estimated demand and supply of equity, which is, on average, 3% of GDP. We further find that SME equity gap in the Research Countries is significantly higher than in the US. The importance of equity should be highlighted, as well-capitalized SMEs are able to mobilize further debt. Filling the equity gap is thus more efficient than filling the loan gap. The total estimated SME financing gap in the US ranges from 2.30% to 3.78% of GDP. Our main result is that the total estimated financing gaps of the Research Countries in Europe are three to five times larger than that of the US.

This study carries important policy implications. We find evidence that the financing gap for SMEs in Europe is substantial. In identifying the size of the gaps in our Research Countries, our results suggest that there are several ways that governments can contribute towards improving the flow of debt and equity to SMEs. For example, recent

work has pointed to the provision of more knowledge about alternative forms of financing, improved loan support and guarantees, and the promotion of non-bank financing channels. Finally, our results suggest that the Capital Markets Union can play an important role in the provision of equity (better disclosure and listing rules) and debt (introduction of private placement markets).

The remainder of the paper is organized as follows. Section 2 provides evidence on the characteristics of the banking and capital markets in each of the Research Countries and on the role of SME financing in each country. Section 3 provides a description of the methodology and results of the estimates of the equity and loan finance gaps in each of the five countries. Section 4 concludes.

Small-Medium Enterprises and Capital Markets in the Research Countries

In this section, we briefly describe relevant SME-specific information within the Research Countries, such as characteristics, contribution, financing structure and access to financing. We also review the status of debt and equity markets in these countries. For reasons of space, a full discussion and most of the details and tables for this section can be found in Appendices 1 and 2. Appendix 1 provides the full section on small-medium enterprises and their contribution to the economy, while Appendix 2 presents the analysis of the status of capital markets in the Research Countries. In this section, we provide the highlights of these two Appendices.

Small-Medium Enterprises: their contribution and financing structure

The European Commission has sought to standardize the definition of the various sizes of enterprises in order to facilitate comparisons across countries. According to the Commission's definition, an enterprise is micro if it employs fewer than ten people, and either its annual turnover or its annual balance sheet is less than EUR 2 mil. Small enterprises are defined as companies with ten to 49 employees, having an annual turnover and balance sheet between EUR 2 and 10 mil. Finally, medium-sized enterprises have fewer than 250 employees, annual turnover less than EUR 50 mil, and balance sheets of less than EUR 43 mil.

Mirco SMEs form the largest group of companies in the European Union (World Bank, 2015). Table 2.1 reports the number of micro and SMEs across the Research Countries over the period of 2008 to 2014. For example, as Table 2.1 shows, there were 2,569,972 SMEs in France, 2,254,315 in Germany, 797,978 in the Netherlands, 1,464,234 in Poland and 433,858 in Romania in 2014. In the period 2008–2014, France had a 12.2% increase in the number of SMEs up to the year 2012, and a small decrease afterward. In Germany, there was stable growth in the number of SMEs over the same seven years, with an average annual growth rate of 3.19%. There was a strong similarity in the growth patterns of the Netherlands and France, with a spike in 2012 and a subsequent decline afterwards. Poland had a huge negative shock in 2008–2009, with a 7.15% decrease in the number of SMEs. Not surprisingly, there was positive growth during the period 2009–2011 and for the following years, until 2014, when it again started to suffer from a slow decline.

Table 2.1. Total number of micro-, small- and medium sized enterprises

	2008	2009	2010	2011	2012	2013	2014
France	2 329 961	2 188 690	2 509 347	2 562 952	2 614 121	2 598 023	2 569 972
Germany	1 866 817	2 018 855	2 053 601	2 137 578	2 184 908	2 201 144	2 254 315
Netherlands	576 286	616 241	776 315	802 377	813 316	802 087	797 978
Poland	1 531 059	1 421 561	1 457 207	1 499 812	1 494 494	1 474 953	1 464 234
Romania	504 581	489 646	442 241	404 338	410 210	426 295	433 858

SMEs can be found in most sectors within the European economy. In terms of a breakdown by sector, the largest share of SMEs is found in wholesale/retail trade, construction, technical sectors and manufacturing. There is some variation across the countries of our analysis. Appendix 3 provides those details, as well as an analysis of the most important trends by sector in each of the Research Countries.

According to recent research, the SME sector will contribute significantly to the recovery of the EU economy after the crisis. SMEs can improve growth through job creation, investments in innovation, and development of new sectors of the economy. If we compare SMEs in the

three high-income economies of our Research Countries (i.e, France, Germany and The Netherlands). we observe a similar trend showing that these firms are large contributors to the economy and, thus, to the post-crisis recovery. Specifically, SMEs represent 99.81% of the total number of firms, employ 62.82% of the total work force, and contribute 58.52% of the total added value of selected industries in the French economy. Small enterprises account for the highest growth in the number of SMEs (2.16%). Meanwhile, SMEs in Germany represent 99.53% of the total number of firms, employ 63% of the total work force, and contribute 54.88% of the total added value of selected industries in the German economy. The highest

rates of growth found, among SMEs in all sectors, was in the number of small enterprises (4.42%). The contribution of SMEs to German employment increased from 60.38% to 63% over the period 2008–2014. In the Netherlands, SMEs represent 99.83% of the total number of firms, employ 67.51% of the total work force, and contribute 61.92% of the total added value of selected industries in the Dutch economy. The biggest growth among SMEs was seen in micro enterprises (6.21%), while small enterprises had a negative growth rate (-2.12%). Moreover, the impact of SMEs increased Dutch employment from 65.36% to 67.51% over the period 2008–2014.

The data for Poland and Romania are very similar to those of France, Germany and the Netherlands, with the exception of the contribution to total value added, which tends to be ten to 15 percentage points lower. In Poland, SMEs represent 99.8% of the total number of firms, employ 69% of the total work force, and contribute 50.17% of the total added value of selected industries in the Polish economy. The only growing segment among SMEs was small enterprises (0.28%), while micro and medium-sized enterprises had a negative growth rate (-0.77% and -1.11%, respectively). In Romania, SMEs represent 99.68% of the total number of firms, employ 67.23% of the total work force, and contribute 49.94% of the total added value of selected industries in the Romanian economy. Among SMEs, small enterprises were the only growth sector (0.26%), while micro and medium-sized enterprises had a negative

growth rate (-2.75% and - 3.88%, respectively). The contribution of SMEs to Romanian employment increased from 65.82% to 67.23% over the 2008–20eriod.

In general, these data confirm that SMEs are important drivers of economic growth and add significant value to their respective economies. When external shocks occur (economic crises or change in regulations), the SME sector is negatively affected by constrained access to short- and long-term financing. The numbers confirm earlier literature suggesting that the most important factor in the performance of the SME sector is access to financing. In order to document the financing options for SMEs, we will compare alternative sources of debt and equity available throughout the capital markets of the Research Countries.

Debt Markets

Bank loans and lines of credit remain the main source of external financing for SMEs. The bank-lending channel was weakened during the financial crisis, as evidenced by banks' reduced lending capacity and the increase in interest rates on new loans. The higher sensitivity to external shocks led to changes in the supply of short- and long-term financing to SME borrowers. Table 2.2 captures the differences in the number of credit institutions from 2008 to 2013. More specifically, a comparison with the Netherlands and Germany shows that France saw a decline but proved stable, in contrast to the other two countries of our analysis.

Table 2.2. Total number of commercial banks by country

	2008	2009	2010	2011	2012	2013
France	310	302	290	281	278	280
Germany	273	278	280	284	273	277
Netherlands	302	295	290	287	260	253
Poland	71	70	70	67	69	69
Romania	31	30	31	31	30	29

Table 2.2 shows a very big disparity in the number of commercial banks in Poland and Romania compared to the other three countries. France, Germany and the Netherlands have close to the same number of licensed banks – fewer than 300 – whereas Poland has 69 licensed banks and Romania only 29. The number of banks decreased over the 2009–2013 period, from 310 to 280 in France and from 302 to 253 in the Netherlands. There are also striking differences across the Research Countries in terms of total banking sector assets. While total assets contracted significantly in France, Germany and Netherlands, there was also an increase in Poland due to a monetary stimulus and significant depreciation of the currency (Piatkowski, 2015). Note that the total assets remained unchanged in Romania.

Overall, banking sector performance improved in France, Germany and the Netherlands but declined in Poland and

Romania. In particular, the share of non-performing loans worsened in France and Romania but stayed constant in Germany, the Netherlands and Poland. Bank financing by deposits increased in Germany and Netherlands, while staying unchanged in France, Poland and Romania. The relatively small SME exposure to bank loans in Romania and Poland may be explained by the major presence of foreign banking groups.

Equity Capital Markets

Systematic access to equity financing is available from private equity funds, venture capitalists and stock markets. Recent research suggests that equity financing should be an effective alternative to the traditional SME bank financing. In fact, the capital market platforms, where SMEs are listed, typically carry lower information require-

ments and have lower fixed listing costs. But for the time being, it seems that only medium-sized firms are fit for this type of financing. The analysis of the trends after the financial crisis show an increased demand for financing coupled with a stagnation of stock markets and a significant drop in the supply of private equity and venture capital in the Research Countries and Europe in general (Grover and Souminen, 2014; OECD, 2013).

The numbers show that European private equity (PE) investment financing of SMEs is very small compared to that in the United States. If we look at the breakdown of investments by size of portfolio company (Table 2.3), we can spot some notable features: while, on average,

the total pool of investments is increasing – as is the number of employees in the portfolio company – some groups do not fall within this rule. For example, companies with 200-249 employees are suffering from severe underinvestment, while companies with 1000-4000 employees have the largest pool of PE investments. The most popular PE sectors are life sciences, consumer goods and retail, business, and industrial products, while the least popular are real estate, agriculture and construction. In terms of industry investment trends, we observe a decrease of interest in construction, retail, communications, computers and consumer electronics from 2011 to 2013.

Table 2.3. Total Private equity investments by size of portfolio company, EUR mil

# of employees	2008	2009	2010	2011	2012	2013
0 - 19	1 788,68	1 271,34	1 761,96	1 545,01	1 753,25	1 473,34
20 - 99	5 038,68	4 225,05	4 717,14	4 426,17	4 039,39	3 874,64
100 - 199	4 594,98	1 925,23	2 702,78	4 568,37	3 516,63	3 356,81
200 - 249	1 634,37	673,06	1 759,62	1 541,51	1 430,95	1 066,24
250 - 499	4 232,78	2 074,48	4 014,85	4 684,69	4 489,48	4 095,15
500 - 999	6 519,74	3 699,92	3 976,37	7 422,04	6 046,67	6 056,95
1,000 - 4,999	17 969,22	7 167,48	15 220,34	12 279,57	10 687,99	11 674,89
5,000 +	11 587,28	3 271,85	7 765,42	8 402,79	4 787,93	4 128,19
Total	53 365,73	24 308,41	41 918,47	44 870,15	36 752,29	35 726,21

Table 2.4. Total amount issued by IPO, USD mill

	2008	2009	2010	2011	2012	2013	2014
France	50,6	1 215,5	380,7	223,1	304,9	1 533,8	4 426,7
Germany	1 062,8	94,1	1 000,0	1 415,0	1 753,9	3 191,8	3 663,7
Netherlands	2 170,3	1 495,4	148,2	-	1 063,7	333,3	5 439,0
Poland	1 186,0	2 154,7	2 846,7	2 369,9	888,9	1 466,0	268,0
Romania	22,0	-	-	-	-	193,0	606,1

Private equity is more widely spread in France, Germany and the Netherlands, while in Poland and Romania, there are only 37 PE firms in total, according to EVCA data. Germany and France have 260 and 270 PE houses, respectively, but in France, the generalist firms dominate (in other words, they have a broad area of investment activity), while in Germany, more than 50% of firms are VCs. The Netherlands has a relatively equal number of VCs, buyout and generalist firms, and Romania has one firm of each type.

If we focus on venture capital (VC), the downward trend after the crisis mimics that of PE. The most attractive sectors for venture capital firms are life sciences, communications, computers, and consumer electronics (see Figure 1.1). Other relatively important industries for VCs are energy and environment, consumer good and retail services, business, and industrial services. For the period 2011–2013, some industries, such as energy and environment, communications, and financial services, experienced a significant decline in investments from venture capitalists.

Figure 1.1. Venture investment in Europe by sector, EUR mil
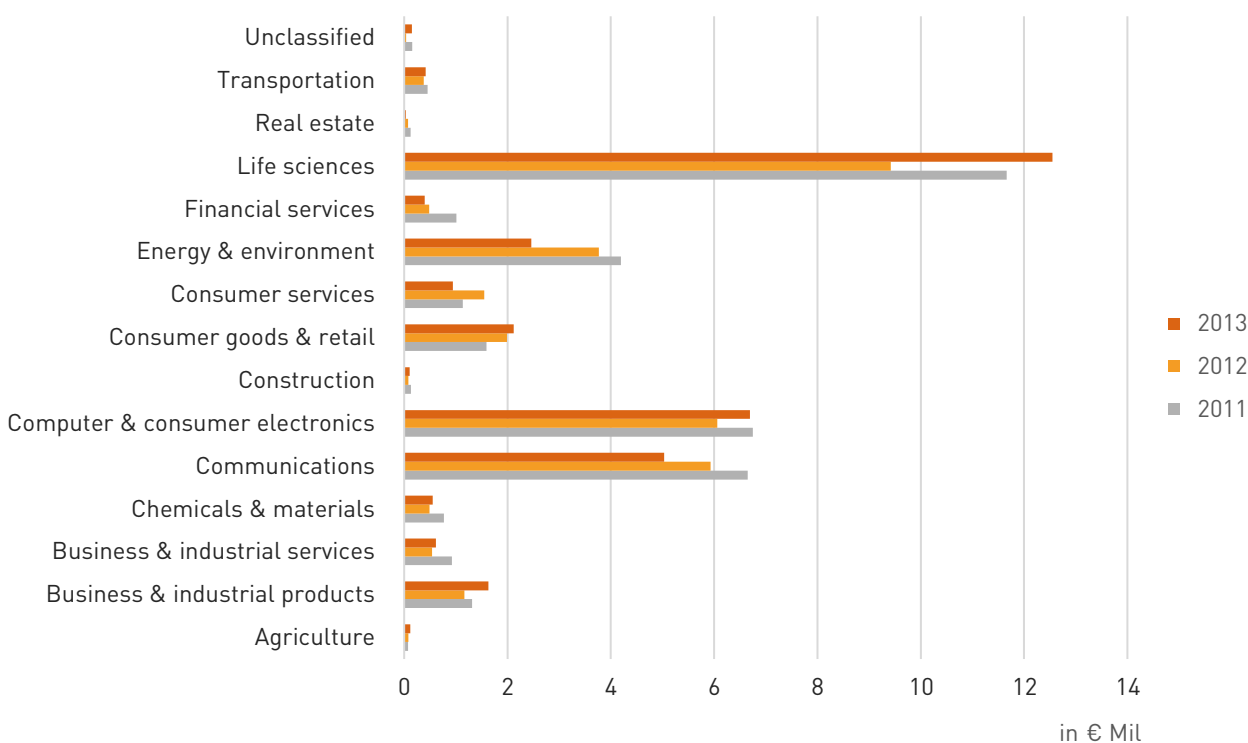
Figure 1.2. Market capitalization of listed companies, USD bil

*domestic equities
& exclusive foreign listings
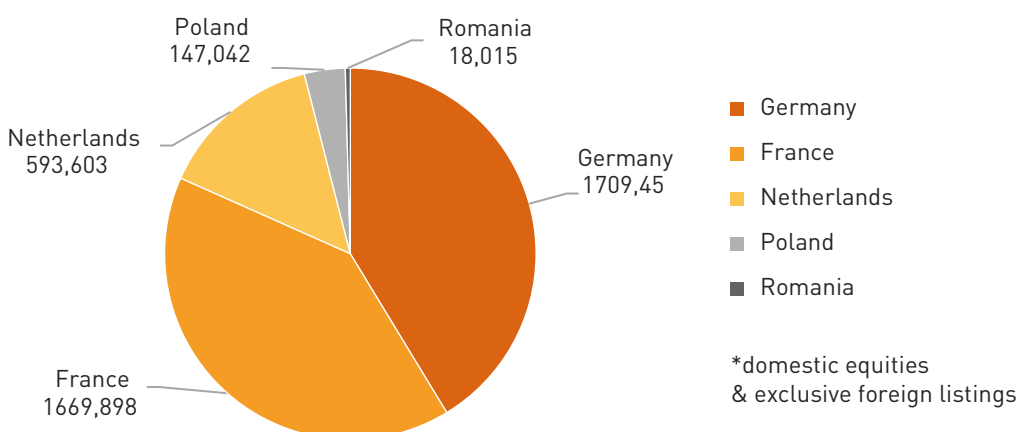
For European venture industries, companies with 0–99 employees (88% in 2013) account for the biggest share of capital invested. More than 90% of VCs' investees are small and medium-sized enterprises, and that share increased after the crisis. Thus, one of the most important sources of financing of SMEs are venture capital funds. In 2008, French total venture peaked, with over EUR 1 bil invested. However, since then, total venture has been fluctuating between EUR 600 and EUR 700 mil and is currently over EUR 700 mil.

Seed investments make up to 1.5% of total venture capital invested, which is a slight decrease relative to 2011, when it was 2.37%. In Germany, there was a significant decline in later- stage venture investments, from 64.7% in 2008 to 54.4% in 2013. Similarly, there has been a shift of focus from later-stage financing to start-up financing. In 2008, German total venture peaked, with over EUR 1 bil

invested. However, since then, total venture has fluctuated between EUR 500 and EUR 700 mil and is currently over EUR 700 mil.

There is a long literature showing that stock markets in Continental Europe are not very deep. The financial crisis has done nothing to improve this situation. For the most part, the Research Countries exemplify this situation, with the possible exception of The Nether- lands. Table 2.4 shows the total amount issued via IPOs. As the table shows, the amount raised through stock markets is very small, and IPOs are not common. Figure 1.2 summarizes the situation of stock markets, plotting the market capitalization of listed companies in each of the five countries in our study. The figure illustrates the very large differences between Poland and Romania on the one hand, and the remaining three countries on the other.

In this section (and Appendices 1 and 2), we have set out the importance of SMEs in the economy and have mapped out the potential sources of capital market financing in each of the Research Countries. The data suggest that banks' lending capacity shrank after the financial crisis, possibly due to higher risk aversion at a time when economic growth had slowed. In addition, equity financing, especially for the SME sector, declined in this period. In light of these findings, it seems that the SME sector faces increasingly limited access to financing as it competes with larger firms for a shrinking pool of resources. In the next section, we seek to provide an estimate of the size of this problem by quantifying the financing gap for SMEs in the Research Countries.

Measuring the Financing Gap

We start our empirical analysis by quantifying the financing gap in the Research Countries. We first propose a methodology that quantifies the financing gap as the difference between the demand and supply of SME loans and available equity, estimated through various methods. We explain the methodology used to estimate the supply of SME financing in the Research Countries, the demand for it, and the gap between these figures. Next, in order to provide a contextual interpretation of the financing gap estimates, we use the United States as a benchmark country. Finally, we discuss possible causes of the financing gap.

One of the motivations for estimating the supply and demand of credit and the SME financing gap is to provide information to policymakers in creating a more flexible and efficient regulatory environment. Also, these estimates may assist investors to develop new technologies and financial products to help meet excess demand for financing.

It is within this context, we have seen efforts by, for example the OECE (2014, 2015), to analyze the loan and equity supply trends and the effectiveness of diverse financial instruments to bridge the financing gap. The first empirical studies on the topic focused on the financing gap in emerging markets, examining the mismatch between potential supply and demand (IFC, 2013). More recently, attention has shifted to researchers estimating the financing gap in European countries based on publicly available data. These studies seek to measure the supply and demand of credit and the factors preventing companies from acquiring adequate external financing (EIB, 2014).

The United States as a benchmark

We present a set of measures of the financing gap in the United States, where data are more readily available for carrying out estimations. To get a better sense of the financing options, Table 3.1 reports SME loan and equity supply in the United States for 2013. We use the OECD data in order to provide an estimate of SME loan supply (OECD, 2013). In 2013, SMEs obtained loans over EUR 440 bil (USD 585 bil), or with 3.43% of the US GDP. For Europe, the majority of SMEs obtain external finance through the banking sector. The absolute measure of the EU total loan supply (EUR 1.4 tn) is higher by EUR 0.9 tn than the total US loan supply (EUR 0.5tn), despite similar levels of GDP (around EUR 17 bil). This result is a consequence of the historically larger role of banks in Europe than in the US (AFME, 2013). By contrast, US SMEs have a larger financing pool coming from equity funding and other sources, which, together, make for a larger pool of SME financing. Table 3.1 provides two estimates of the US equity supply for SMEs in 2013: 0.18% (over EUR 29 bil) and 0.24% of GDP (over EUR 40 bil). We used two sources to reference these estimates: PWC Money Tree Report 2013 and OECD (2015) estimates.

In order to estimate the US SME financing demand, we multiply three variables: percentage of SMEs needing a loan (equity); average loan (equity) demanded; and number of SMEs (see Table 3.2). For the variable percentage of SMEs needing a loan (equity), we use three different sources. The first source simply takes its estimated figure from the study by Firozmand, Haxel, Jung, and Suominen (2015). The second source provides an estimate of the variable by including findings from the study by Mils and McCarthy (2014). Finally, the third source uses the survey figures from the Federal Reserve Bank of New York, Atlanta, Cleveland and Philadelphia (2014). While we were unable to find a reference for the share of SMEs needing equity in the current literature, we assume that financing need is a good proxy for both need for loans and need for equity.[1]

Next, we focus on the variable average loan demanded (USD mil) which is also based on three different sources. First, "source 1" is based on information provided in the study by Souminen and Grover (2014). Table 3.2 shows intervals of three different loan sizes and the approximate weights of the firms that applied for those loans. Therefore, we calculate our estimate by taking the mid value of the interval and multiplying it with provided weights. Second, "source 2" uses the same estimated average loan size as in "Source 1." Third, "source 3" uses the average loan demanded from the Federal Reserve Bank Report (New York, Atlanta, Cleveland and Philadelphia, 2014)[2].

The variable average equity demanded (USD mil) is referenced from different sources. In Sources 1 and 2, the variable is from the study by Souminen and Grover (2014). In Source 3, the average equity demanded is from Firoozmand et al. (2015, Table 3.2). The variable number of SMEs serves to approximate the demand for loans and equity at the national level. This variable is derived from OECD 2015 data (Table 3.2).

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[1] In the case of EU countries, we were able to distinguish these two variables.

[2] In all mentioned studies, the bank loans observed are less than USD 1 mil.

Table 3.1. The US SME supply of loans and equity in 2013

SME Loan Supply	Source #1 FRED/AFME	Source #2 OECD	Definition and sources
A. SME loan supply			
SME Loan Supply ($ mil)	585 347		Def: Loan balances held at financial institutions, loans to non-financial firms, loans up to USD 1 million. Source: OECD, Financing SMEs and Entrepreneurs, 2015.
SME Loan Supply (€ mil)	0		
SME Loan Supply as % of GDP	3,43%		
B. Total outstanding loans			Def: Commercial And Industrial Loans, All Commercial Banks, Millions of Dollars, Annual, Not Seasonally Adjusted. Source: US Federal Reserve Economic Data, 2015.
Total outstanding loans ($ mil)	1 631 053	2 635 435	
Total outstanding loans (€ mil)	0	0	
Total outstanding loans as % of GDP	9,55%	15,43%	Def: Loan balances held at financial institutions, loans to "Commercial Real Estate", "Commercial and Industrial Loans", and "Commercial real estate loans not secured by real estate"). Source: OECD, Financing SMEs and Entrepreneurs, 2015.
C. % of SME outstanding loans to total outstanding loans	35,89%	22,21%	Def: A result of division of (A) by (B).
SME Equity Supply			
A. SME equity supply			
SME Equity Supply ($ mil)	29 964	40 534	Def: Total sum of Seed, Early, Expansion and Later Stage investments by VC funds. Source: PwC MoneyTree Report, 2014.
SME Equity Supply (€ mil)	0	0	
SME Equity Supply as % of GDP	0,18%	0,24%	Def: SME Equity is a sum of Seed, Early Stage and Later Stage investments by Venture Capital firms. Source: OECD, 2015.
B. Total venture capital issued			
Total venture capital issued ($ mil)	488 000	156 500	Def: AFME estimate of US PE & VC outstanding investments. Source: AFME, Bridging the Growth Gap 2015.
Total venture capital issued (€ mil)	0	0	
Total venture capital issued as % of GDP	2,86%	0,92%	Def: VC capital under management (2014). Source: NVCA, 2015.
C. % of SME issued equity to venture funds	8,31%	25,90%	Def: A result of division of (A) by (B).
Total SME Financing Supply			
Total SME fin. Supply			
Total SME fin. Supply ($ mil)	615 311	625 881	Def: The total sum of SME loan supply and SME equity supply.
Total SME fin. Supply (€ mil)	0	0	Note: averge exchange rate for 2013 is 1 USD = 0.752955 EUR.
Total SME fin. Supply as % of GDP	3,60%	3,66%	Def: Share of Total SME fin. Supply in GDP.
GDP (in $ mil)	**17 078 000**		**Source: US Federal Reserve Economic Data, 2015**

Source: US Federal Reserve Economic Data, 2015

Table 3.2. The US SME demand for loans and equity in 2013

			Source #1	Source #2	Source #3	Definition and sources
SME Loan Demand						
A. % of SME needing a loan						
	Micro				31,00%	Def: % of SMEs needing a loan - Source 1: Fig 2 from "State of SMEs financing in the United States" (Firoozmand, Sh., Haxel,Ph., Jung, E., and Suominen, K., 2015) Source 2: Fig.9 from the study "State of Small Business Lending" (Mils, McCarty, 2014; pg.20). Note (1). Def. 3: % of SMEs applied for the product (loan). Source 3: Joint Small Business Credit Survey Report, Federal Reserve Banks of New York, Atlanta, Cleveland and Philadelphia, 2014
	Small		35,00%	43,75%	42,00%	
	Medium				26,00%	
		Applied and Obtained a Loan	Mid point in interval ($ mil)			
	Micro	<100k	0,08	80,00%		Def: Average loan demanded ($ mil) - Source (1) In order to estimate the average loan demanded we use an indication of the weights of each of the loan category in total demand. Fig. 5 from the study "2014 Summary - State of the SME financing in the United States" (Souminen, K., Grover, A., 2014)
	Small	100-250k	0,18	10,00%		
	Medium	250-1mil	0,75	10,00%		
B. Average loan demanded ($ mil)						
	Micro				-	Def: average loan demanded by micro, small and medium sized enteprises is calculated as weighted average of respondents (SMEs), which have applied for a loan up to 100'th USD, from $100'th to $250'th, from $250'th to $500'th, from $500'th to $1M and from $1M to $4M. Source: Joint Small Business Credit Survey Report, Federal Reserve Banks of New York, Atlanta, Cleveland and Philadelphia, 2014
	Small		0,15		-	
	Medium				-	
C. Number of SMEs			14 544 533			
	Micro		13 645 795			Def: Number of SMEs - OECD 2015 report. We exclude number of Medium SMEs in the US, due to the different firm classification standards in the US. The US SMEs include firms that have up to 500 employees (EU 250).
	Small		817 109			
	Medium		81 629			
D. SME Equity Demand=A*B*C ($ mil)						
Total SME loan demand ($ mil)			776 314	970 393	-	
Total SME loan demand (€ mil)			-	-	-	Def: Total SME loan demanded - variable derived as a sum of loans demanded in D. SME loan demanded as % of GDP is equal to the Total SME loan demand divided by GDP ($ mil). Note: averge exchange rate for 2013 is 1 USD = 0.752955 EUR
SME loan demand as % of GDP			4,55%	5,68%	5,00%	

Table 3.3. The US SME gap of loan and equity in 2013

	Source #1	Source #2	Source #3	Definition and sources
SME Equity Demand				
A. % of SME needing equity				
Micro				Def: % of SMEs needing equity - is the approximated variable as in case of loan demand. The demand for finanincg is taken as a general indicator of share of firms needing financing regardless of the type. For sources please check the variable % of SMEs needing a loan
Small	35,00%	43,75%		
Medium				
B. Average equity demanded ($ mil)		Report "3.5mil average seed deal in 2013"		
Micro				Def: Average equity demanded - variable from differnt literature. Source #1: "A, the average Seed deal up until Q3 in 2013 was $3.5 million" from study "2014 Summary - State of the SME financing in the United States" (Souminen, K., Grover, A.. 2014, pg.21). Source #3: "Early stage deals received $15.8 billion and later-stage deals $12 billion, with deal sizes averaging $7.3 million and $14.3 million, respectively. Average seed stage deal was $3.7 million, much larger than a typical angel investment raise." ("State of SME Finance in the United States in 2015", pg. 27)
Small	3,50		3,7	
Medium			7,3	
C. Number of SMEs				
Micro				
Small	136 364			
Medium	21 740			
D. SME Equity Demand=A*B*C ($ mil)				
Micro				
Small	167 046	208 807	220 739	
Medium	26 632	33 289	69 432	
Total SME equity demand ($ mil)	193 677	242 097	290 171	
Total SME equity demand (€ mil)	-	-	-	Def: Total SME equity demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP ($ mil). Note: averge exchange rate for 2013 is 1 USD = 0.752955 EUR
SME equity demand as % of GDP	**1,13%**	**1,42%**	**1,70%**	
Total SME Financing Demand				
Total SME fin. demand ($ mil)	**969 992**	**1 164 070**	**1 047 144**	
Total SME fin. demand (€ mil)	**-**	**-**	**-**	Note: averge exchange rate for 2013 is 1 USD = 0.752955 EUR
% of SME fin. demand as % of GDP	**5,68%**	**6,82%**	**6,13%**	
GDP ($ mil)	**17 078 000**			Source: US Federal Reserve Economic Data, 2015

Notes: (1) As explained in the Mills and McCarthy (2014) - we add to the exisiting estimated demand for loans an approximation of the updated demand for loans, based on a survey of loan officers, who answered the question, "Apart from normal seasonal variation, how has demand for C&I loans changed over the past three months? (Please consider only funds actually disbursed as opposed to requests for new or increased lines of credit)." The question is asking for a very narrow interpretation of increases in demand as it is difficult to fully understand small business demand for credit without also including requests for new or increased lines of credit." (Mills and McCarthy, 2014)

Table 3.1 shows that the 2013 US SME loan supply equaled 3.43% of GDP, while the equity supply was within the range of 0.18% to 0.24% of GDP. Using different sources and calculation methods, we find the 2013 US SME loan demand was quantified within the range of 4.55% to 5.68% of GDP. Table 3.2 also shows that by applying similar methods to estimate the 2013 US SME equity demand, the range of 1.13% to 1.70% of GDP.

Finally, Table 3.3 shows the estimates of the 2013 US SME loan gap to be within the range of 1.12% to 2.25% of GDP.3 Moving to the second column in Table 3.3, we show that the estimates of the equity gap lie within the range of 0.96% to 1.52% of GDP. Based on the last column of Table 3.3, we conclude that the total 2013 US SME financing gap is within the range of 2.01% to 3.78% of GDP.

Methodology for Measuring the Financing Gap in European Countries

In this section, we present a method for estimating the supply and demand of SME financing, including the 2013 EIB study that assessed the financing needs of the SME sector in five Eastern Partnership countries (Ukraine, Armenia, Azerbaijan, Georgia, and Moldova). The EIB study consists of data from statistical offices and through surveys, which greatly helped in assessing the financing demand.4 We rely on the methods used in the 2013 EIB study, but expand the methodology along several dimensions. First, we estimate supply and demand using different sources of data in order to insure a full overview of the currently available data on SME financing supply. Second, we apply different methods in order to estimate the financing demand. We believe these different methods help us to avoid the sample selection issue that affected the EIB study. Specifically, the EIB study estimated the average loan demanded by observing only a sample of the loans that were obtained. By doing so, we correct for this issue and include different sizes of obtained versus requested loans. Third, we estimate the loan demand of those firms that applied for but were rejected for a loan. Finally, as explained earlier, our study focuses on a different set of countries: the Research Countries of France, Germany, the Netherlands, Poland and Romania.

Supply Estimation

The first step of the methodology is to assess the supply side of loans and equity. Figure 3.1 shows the estimation method used to derive the SME supply of loans/equity. The EIB study suffered from a lack of data on total SME outstanding loans in the economy. As such, they used a survey of several large banks to obtain variable A (% of

SME outstanding loans to total outstanding loans (equity)) and applied that share to the information on total outstanding loans. , we collect data on SME outstanding loans, which we use to directly approximate the supply of loans at the country level. Therefore, we do not have to use the share of those loans in a smaller sample and apply it to the national-level numbers. Nonetheless, we do find it important to estimate variable A in the economy since it provides a valuable insight into the share of SME loans (equity) in total loans.

In order to estimate the SME supply of equity, we use data from the European Venture Capital Association (EVCA). Moreover, we use the numbers on total equity issued per country, but only equity issued for seed, start-up, and later-stage investment – excluding buyouts.45 In addition, we assume that the SME equity supply comes from venture capital (VC) that is focused on smaller-scale projects.

Demand Estimation

In this section we focus on the methodology to estimate the total SME demand for loans (equity) by firm size. For this purpose, we use information on the total number of firms in the economy clustered by size; average loan (equity) size demanded, clustered by firm size; and share of firms needing a loan (equity), clustered by firm size. At this point, one thing seems clear: the demand for equity is not the same as demand for bank loans. For example, firms that issue equity tend to give up partial control. In addition, the demand for equity can be a sequential outcome after obtaining a loan and firms can demand equity after all other debt channels have failed.

To estimate demand, we extract data from the European Commission's database on the total number of firms by size in a given year. To classify firms into micro, small and medium, we then used the European Commission definition, which is based on the number of employees. Finally, we used the definition that micro firms are those with fewer than nine employees; small firms have from ten to 49 employees; and medium firms have between 50 and 249 employees.

The variable average loan size (equity) demanded by firm size and the percentage of firms needing a loan/equity by firm size are based on data from the SAFE ECB Survey (2013),5 made available for this study. In order to estimate the average loan size demanded by firm size, we used the following question from the SAFE ECB Survey (2013): "What is the size of the last bank loan that your enterprise . . . obtained or renegotiated in the past 6 months? (if applied and obtained) . . . [or] attempted to obtain in the past 6 months? (if applied and was rejected)"

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3 In the US, the financing demand is relatively small. This could be the outcome of two factors. First, the share of SMEs in the US economy is not as high in Europe. Second, the average loan demanded is referenced from reports which included only loans that were less than 1 million USD.

4 The supply of equity does not include private/business angel investments in SMEs.

5 SAFE Survey (2013). Appendix 3 Tables D1 and D2 illustrate the distribution of observation weights. Table D2 shows weights used in the ECB SAFE survey sampling, which assigned weights based on the relevance in the economy (more details can be found here). Table D1 shows the weights of the firms in the sample by size. In order to unify the sampling weights, we always clustered our samples by firm size as the whole sample. In this way both types of weights are equal.

Figure 3.1. Estimation Methodology for Loans and Equity Supply
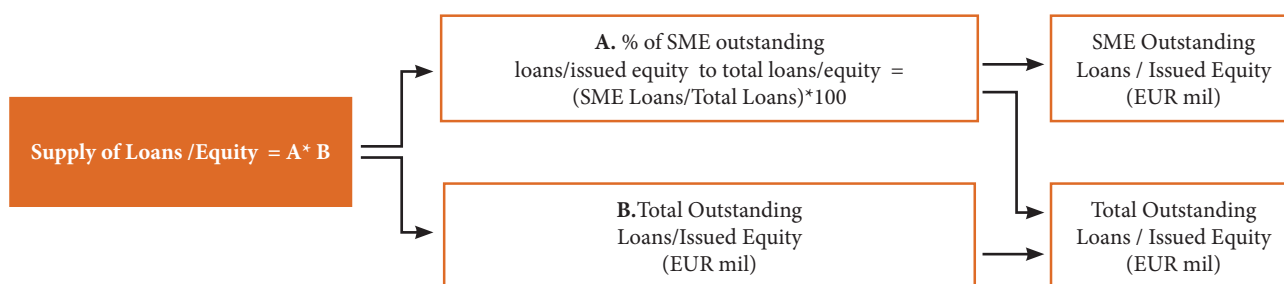
Figure 3.2. Estimation Methodology for Loan/Equity Demand
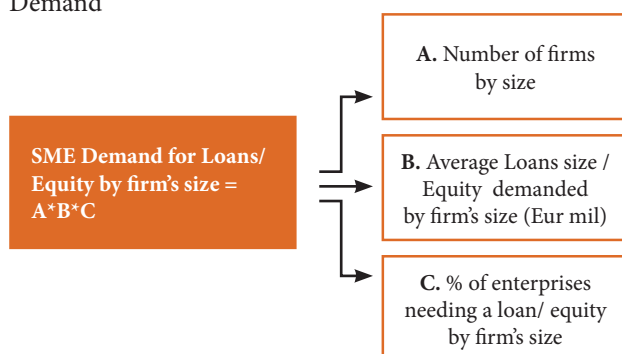
The class of firms if applied and obtained represents those firms that applied for and obtained a loan. Focusing on the answer to this question allows us to distinguish between firms that obtained 100%, those that obtained between 75% and 99%, and those that obtained between 1% and 74% of a loan for which they applied. We use this diversification to estimate the average loan demanded and to correct for the bias that emerges when observing only obtained loans (discussed later in this paper).

We note that the class of firms that applied and were rejected for a loan comprises firms that applied for and did not obtain a loan.6 This class of firms is referred to as "attempted." We use this classification in one of the methods to assess the demand for loans. We use this approach to address the sample selection issue mentioned earlier. For each of the demand tables (see below), we show three different methods to estimate the loan demand and two different sources to estimate the equity demand.

Our SME loan demand estimations are listed in the first part of the table. In Method #1, we estimate the variable average loan demanded (mil EUR) using the average loan obtained from the ECB SAFE Survey (2013). This is the average loan that firms obtained after applying for one and being accepted for it by a bank. However, this estimate suffers from the sample selection bias since it shows

only the average loan for firms that acquired a loan and does not distinguish between loans requested and those obtained.

In Method #2, the variable average loan demanded (mil EUR) is estimated by calculating different sizes of average loans requested and weighted with respect to their shares in total loans obtained. We first estimate the average loan demanded by firms that applied for one and received 100% of their requested amount; next, the average loan increased by 12% for firms that applied for a loan and received more than 75% of what they demanded; and, finally, the average loan increased by 50% for firms that applied but received less than 74% of the requested amount.7

Turning to Method #3, the variable average loan requested (mil EUR) is estimated by calculating the average loans obtained (including desired shares) and the average loans attempted (rejected).8 Then, the average loans from those two categories are weighted by relative shares in the total number of firms that applied for loans. Consequently, by applying this weighting scheme, we are able to account for the demand for loans that were ultimately rejected.

The second set of demand tables (Tables 3.5, 3.8, 3.11, 3.13 and 3.15) show the total SME equity demanded, using two different sources of data. For the first source, we use European Venture Capital Association (EVCA) data to estimate the variable average equity demanded (mil EUR). For each country in our study, we use EVCA data on seed, start-up, and later-stage investments to calculate the average equity capital issued.9

For the second source for the variable average equity issued (mil EUR), we use the estimated average of loans obtained (Method #1), based on the ECB data. The justification for using the average loan requested, as a proxy for the average equity demanded, is the assumption that this variable signals the size, not the type, of the financing need. Additionally, the need for the specific type of financing is identified in the variable percentage of SMEs needing equity.10

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6 For more questions about the exact formatting of the questions and answers, please check the SAFE ECB Survey 2013 Questionnaire (2013).

7 Appendix 3 (Tables D3, D4, D5, D6 and D7) provide detailed tables on the calculations of loans for each category.

8 We are aware that the rejected loan applications do carry high risks. By including the rejected loans, we wanted to estimate the correct upper limit of total demand for loans.

9 Details can be found in section 3.

10 With this variable we were able to address the issue that some industries are more likely to attempt acquiring equity financing than others.

Figure 3.3. Distribution of firms by loan size obtained
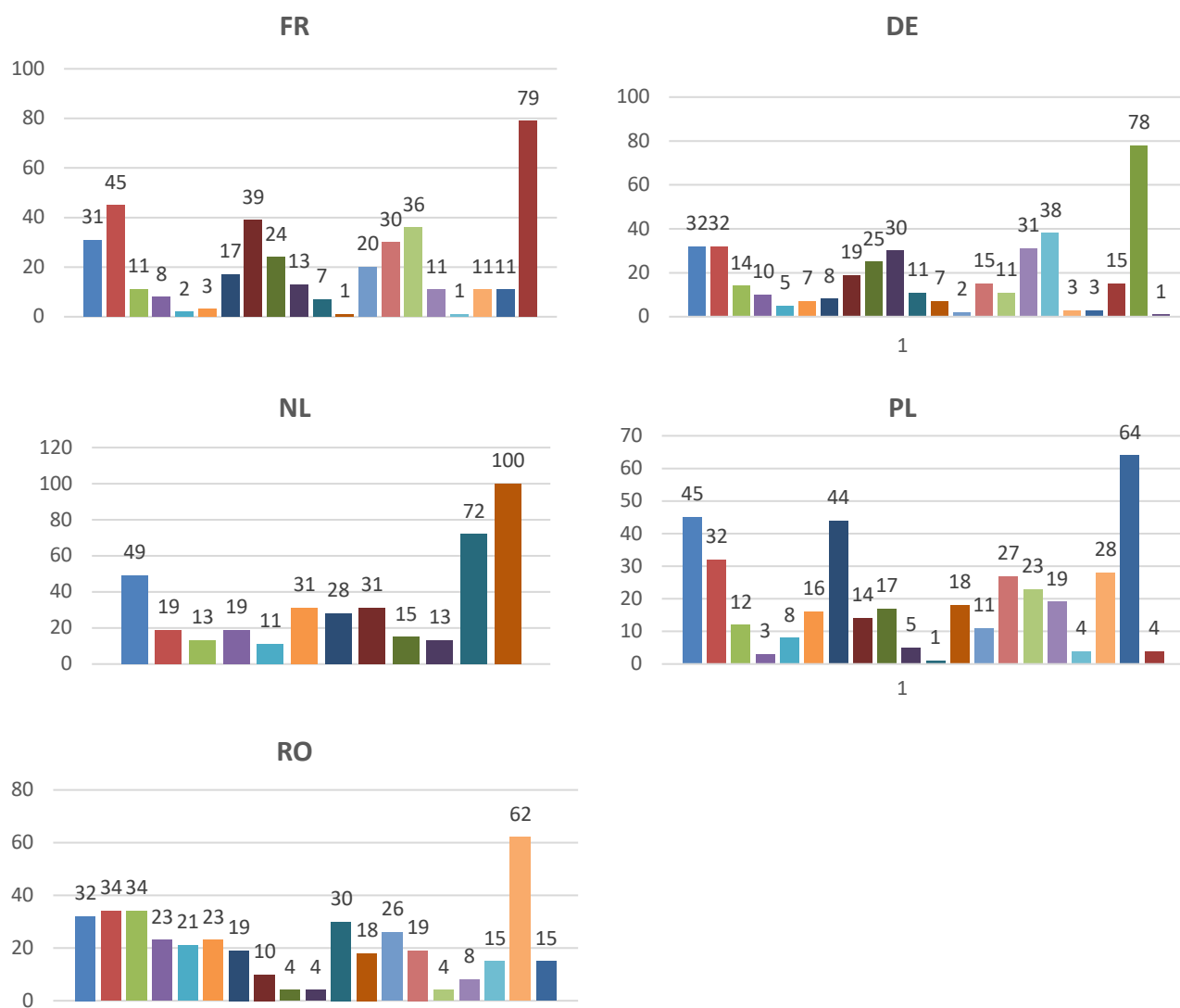
Finally, the last set of demand tables (Tables 3.5, 3.8, 3.11, 3.13 and 3.15) show the total estimated SME financing demand using three different methods for loan demand and two different data sources for equity demand.

Figures 3.3 and 3.4 show the distribution of firms' answers to questions regarding the average loan size requested and obtained.[11] Since an answer to this specific question is an ordered variable, to estimate the real numbers, we have to make some approximations. Specifically, to calculate the average loan demanded (both obtained and attempted) per firm size and within each country, we use the midpoint of the categories and weight them by the share of respondents in each firm class size.[12]

The variable "% of firms needing a loan/equity by firm size" is derived from the SAFE ECB Survey question: "Are the following sources of financing relevant to your firm? That is, have you used them in the past or considered using them in the future? . . . bank loan (excluding subsidized bank loans, overdrafts and credit lines) [and] . . . equity capital."

Figure 3.5 shows the share of firms for which bank loans are relevant. The highest shares of those firms are in France, followed by Germany, Poland, the Netherlands and Romania. In Germany, the Netherlands and Romania, the majority of micro firms actually do not find bank loans essential for their businesses. In Romania, more than half of the small firms find bank loans irrelevant. The answer "don't know" (DK) seems to be the most frequent in Poland relative to the other countries. This indicates that surveyed firms in Poland were unable to assess the relevance of bank loans to their businesses.

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[11] Figure 3.3

[12] In a few instances we see larger proportions of firms attempting to secure a loan size of EUR 1M. This is a consequence of the small number of firms being surveyed in that category.

Figure 3.4. Distribution of firms by loan size attempted

FR

DE

NL

PL

RO
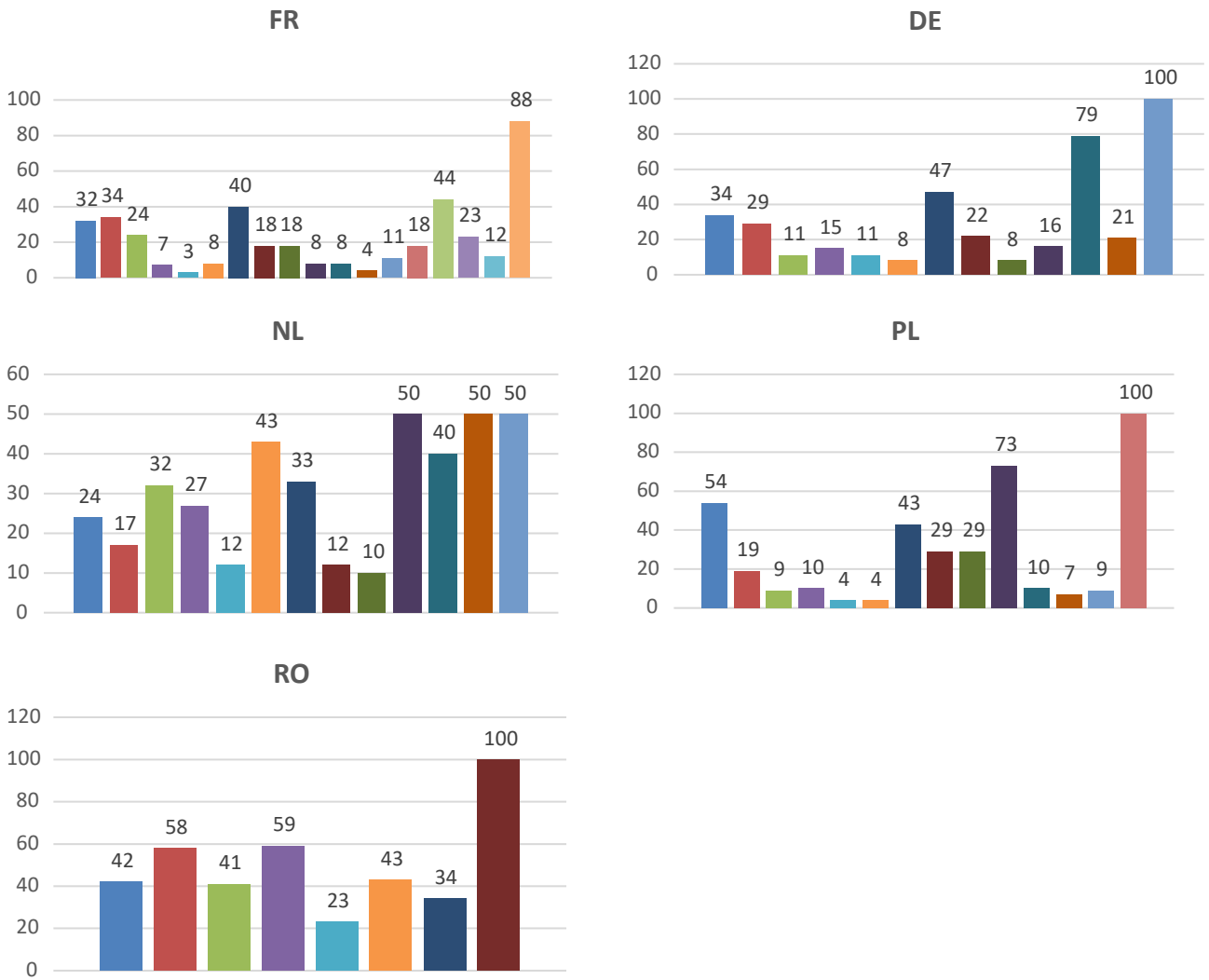
Figure 3.5. Distribution of firms by relevance of a bank loan
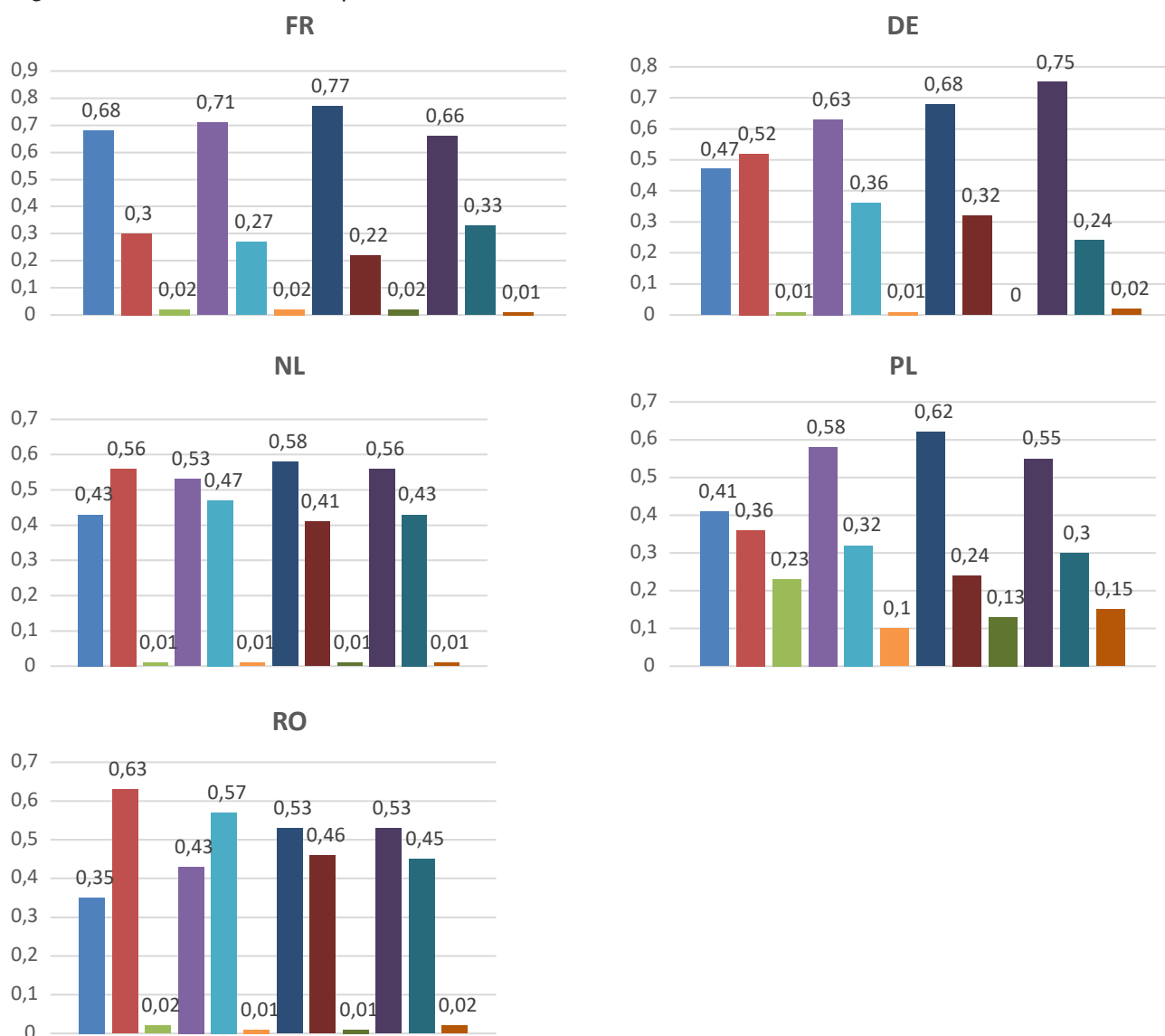
The results reported in Figure 3.6, show that French firms have the highest frequency of assessing a need for equity. Germany is the second-highest share of firms needing equity, followed by Poland and then Romania.13 The majority of firms in all five countries find equity capital irrelevant. The Netherlands ranks the highest shares of those types of firms, followed by Romania, Germany, France and, finally Poland. More specifically, the highest frequency of firms could not determine the extent to which equity is relevant in Poland.

Finally, in order to estimate the SME financing gap, we use the difference between the SME financing supply and demand. Because we use different methods to estimate demand, we provide several gap estimations. In this way, we are able to provide a range rather than an exact number.14

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13 Figure 3.5 shows the latest data for all Research Countries. Due to the issue with estimates for the Netherlands explained in the further text (estimation of demand) we used an earlier survey. The reasons and detailed descriptions are discussed in Section 3.6. The Netherlands demand table estimates correspond with the data in Figure 3.5 and can be seen in Table D10 (Appendix 3).

14 In Annex 3, Table D12 and D13, we provide detailed names and sources of the variables.

Figure 3.6. Distribution of firms by relevance of equity capital
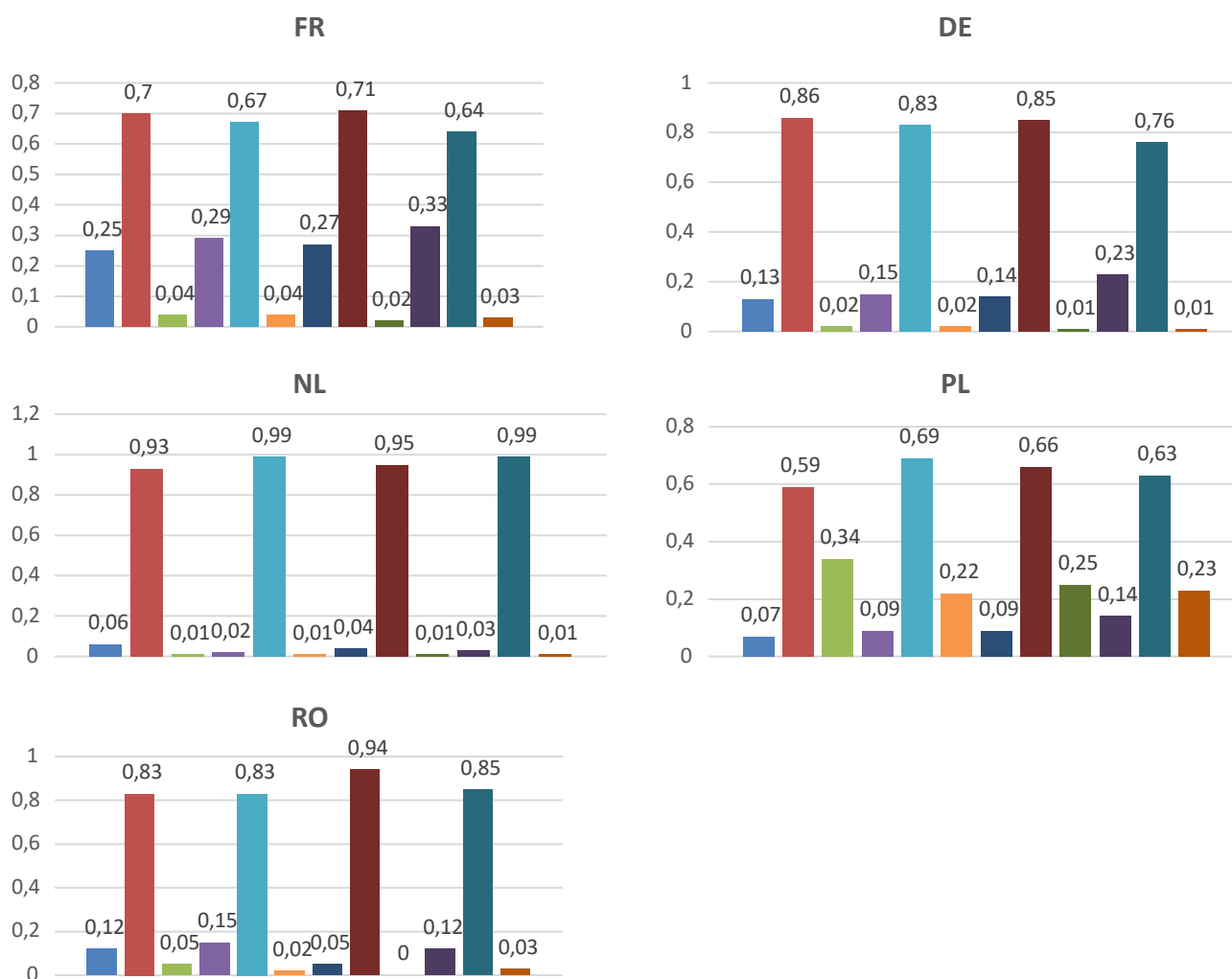
The Financing Gap in France

In this section, we report the results of our estimation of the SME financing gap in France. Our findings are reported in Tables 3.4 through 3.6.

Supply

Let's start by considering the external financing gap of SMEs in France, In France, banks are the primary financing source for SMEs. The share of total assets held by domestic versus foreign credit institutions is changing in favor of domestic (Annex 3).

A primary factor that prior researchers have examined in regard to the access to finance is the tightening of credit standards (Avouyi-Dovi et al 2013). In a tight credit market, many SMEs are likely to experience concerns related to firm growth than those companies less financially constrained. Over the period 2008-2014, assets of small and medium-sized credit institutions declined, while for large credit institutions, they increased. In 2008, large

institutions' assets were EUR 6,101 bil. By 2014, they had increased to EUR 6,154 bil (Annex 3). Furthermore, the supply of loans by private equity also provides evidence regarding the level of economic activity in the SME sector. Relative to the banking sector, private equity funds are small in volume. In 2012, private equity investments generated 0.28% of GDP (KPMG Private Equity Report, 2012). Relative to the five countries in our study, France has the highest number (270) of private equity funds headquartered in France. The evidence shows that private equity funds have EUR 82.3 bil under management (Annex 3).

Overall, the SME loan supply in France is EUR 217,257 mil, or 10.28% of GDP, while the SME supply of equity is EUR 680 mil, or 0.03% of GDP (Table 3.4).

Demand

The empirical evidence on the demand side is limited to the results of the SAFE survey and methods used to assess the average loans obtained. SME financing demand is

defined as the sum of the total demand of all SMEs in the economy. Data collected by the European Commission show that there are over 2.4 mil registered SMEs in France in 2013. This implies that there are 37 SMEs per 1,000 people, which is a marginal decline from 2012.[15]

It is noteworthy that the number of SMEs increased by 2% between 2008 and 2013. Moreover, the different firm-size classes had similar growth (2%), except for medium-sized firms (50-249 employees), which grew by 1% (Appendix 3 Table B.1). The results confirm the substantial contribution of SMEs to the French economy. Similar to Germany, the French SME sector employs 63% of the total work force, and this share has been constant over the period from 2008 to 2013. During this period, there was, in total, a 2% increase of persons employed in the SME sector and there were no significant differences between the classes of firms (Appendix 3 Table B.1).

The added value of the SME sector at factor cost has also been constant over time, at 59%.[16] In the period from 2008 to 2013, there was a 2% total increase in the number of persons employed in the SME sector, and there were no significant differences between different firm classes.

To examine this further, Table 3.5 compares three different estimates of SME financing demand in France for 2013. In particular, column one shows variable names; the second column uses Method #1 to assess the SME demand; and the third column shows the results of the Method #2 demand estimation. The fourth and sixth columns also show the difference between demand estimates by Methods #1 and #2 and Methods #1 and #3, respectively. Finally, the fifth column shows the results of the demand estimation by Method #3.

The bottom part of Table 3.5 shows the results for the total SME demand estimates calculated using three different methods for loan demand and two different sources of equity demand. Our results show that, using these different methods and sources, the total SME financing demand in France for 2013 was between 15.91% and 18.53% of GDP.

Next, in order to estimate loan demand, we multiply the percentage of SMEs needing a loan by the average loan requested (mil EUR) and the number of SMEs. The first two variables are from the ECB SAFE Survey. Details of the exact survey questions are provided in the demand table (Table 3.5). The third variable, the number of SMEs, presents the total number of SMEs in France for 2013 (European Commission data).

In the first part of the table, variable A shows that the share of French SMEs needing a loan increases as the size of the firm increases. However, this difference in demand is quite small, ranging from 3% to 7%. Hence, the share

of French SMEs in need of a bank loan is higher than in any other country in this study. As expected, around 70% of all micro and small firms indicated that a bank loan is important and relevant to their businesses.

Finally, to check the loan demand, we compare our three methods based on the survey-based data and data sourced from the EVCA database. In Method #1, the average loan requested (mil EUR), is equal to the average loan obtained and ranges from EUR 0.15 mil for micro to EUR 0.58 mil for medium firms. When multiplied by the share of firms needing a loan (A) and by the number of firms by size (C), we obtain the estimate of the total SME loan demand in France in 2013: EUR 288,486 mil, or 13.65% of GDP.

In Method #2, we add an additional 12% and 50% to average loans obtained, depending on the size of the obtained versus the desired loan. We estimate that, in this case, the average loan requested was in the range of EUR 0.16 mil for micro firms and EUR 0.69 mil for medium firms. We use the same multiplication of variables, A, B, and C, to estimate that the SME loan demand was over EUR 308 bil, or 14.59% of GDP. Note that the difference between obtained versus desired loans (demand estimated using Method #1 and Method #2) is over EUR 19 bil, or 1% of GDP. The results in this section suggest that French banks provide SMEs with less financing than is requested.

Note that we expand the sample of firms used in Method #3 to estimate the average loan request by adding firms that applied for but were rejected for a loan. We estimate the average rejected loan applied for by firm size and weight it by the relative share of the total number of firms that applied. First, we find that the highest share of rejected loans was among micro firms (slightly above 30%) and the lowest share among medium firms (below 12%). This result is not surprising, as explained above in Section 2. Using Method #3, we estimate that the SME loan demand in France for 2013 was over EUR 326 bil, or 15.44% of GDP. The difference between the demands estimated by using Method#1 and by Method #3 is over EUR 37 bil. These results show that, in line with our expectations, French banks are undersupplying loans at a rate of 1.79% of GDP.

In the second half of Table 4.5, we report the steps and variables used in the equity demand estimation in France in 2013. As for the firms needing equity (A), the share is similar across different firm sizes, at the approximate level of 26%. As in the case of loan demand, the share of firms needing equity is highest in France of the five countries in this study.

Moreover, using the EVCA data, we estimate that the total demand for equity was EUR 65,408 mil, or 3.09% of GDP. To estimate the average equity needed, we use

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[15] In 2013, France's population was 66.3 million (World Bank 2015).

[16] "Value added at factor cost is the gross income from operating activities after adjusting for operating subsidies and indirect taxes. It can be calculated from turnover, plus capitalised production, plus other operating income, plus or minus the changes in stocks, minus the purchase of goods and services, minus other taxes on products which are linked to turnover but not deductible, minus the duties and taxes linked to production." (OECD 2015).

the EVCA data and the average equity issued at the level of EUR 1.44 mil. As in the previous estimation cases, we multiply variables A, B and C to estimate the total equity demanded. We exclude the number of micro firms in this step since the average financing need of this class of firms was unlikely to be over EUR 1 mil. Overall, we estimate, using the ECB data or average obtained loans as a proxy for equity demanded, the total demand for equity to be at the level of 5.12% of GDP (EUR 108,262 mil).

Financing Gap

To investigate the financing gap, we again use three different estimates of the loan gap, depending on the demand estimates used (Table 3.6). The results illustrate that the loan gap ranges from 3.37% to 5.16% of GDP. Estimates in column 3 suggests an equity gap which ranges from 3.06% to 5.09% of GDP. Importantly, the estimated loan and equity gap in France appears to be similar to that found in the other four countries in this study. Nevertheless, the data indicate the financing gap in the US is between 2.30% and 3.79% of GDP, much larger than that in France. This result further confirms that form investments, French investors are likely to find fewer funding opportunities among SMEs.

The Financing Gap in Germany

In this section, we report the results of the estimation of the SME financing gap in Germany. Our findings are reported in Tables 3.7 through 3.9.

Supply

We can see similar trends in the external source of financing for SMEs in Germany and France. Indeed, the German banking sector changed marginally due to the decline in credit institutions from 1750 in 2009 to 1,647 in 2013 (Appendix 3, Table C2). Furthermore, private equity funds are small in volume relative to the banking sector. In 2012, private equity investments generated 0.26% of GDP. For 2013, there are 260 private equity funds headquartered in Germany. In Table 3.11, we also present the total of EUR 33.5 bil under management by private equity funds, including generalist, buyout, and venture capital firms. Consequently, the results indicate that total venture capital demanded (issued) declined between 2008 to 2013, which represents a drop from over EUR 1 bil in 2008 to EUR 700 mil in 2013 (Appendix 3, Table C2).

In Table 3.7 we report the supply of SME loans and equity in Germany for 2013. Column 1 of Table 3.7 also presents variable names, two different sources used to assess the total supply of financing (columns 2 and 3); and definitions and sources of variables identified in the first column (column 4).

The estimation results show that the total SME loan and equity supply in Germany for 2013 was EUR 282,703 mil or 10.06% of GDP. In fact, the largest share of the supply came from the SME loan supply, at 10.04% of GDP, and the remaining part was equity supply, or 0.03% of GDP.

SME loan supply was EUR 282,000 mil, representing SME outstanding loans in 2013. We use two data sources to reference total outstanding loans: the European Central Bank (ECB) and the International Monetary Fund (IMF). We find no significant differences between the numbers that the two sources provided.[17] The findings confirm that German SMEs rely heavily on bank loans. The results reported in Table 3.7 shows that the share of outstanding SME loans among total outstanding loans was 35%. In contrast, we estimated that the supply of equity was EUR 703 mil, or 0.03% of GDP (EVCA 2013).

Demand

In this section, we look at SME financing demand, which is defined as the sum of demands of all SMEs in the economy. According to the 2013 European Commission data, there are over 2.2 mil registered SMEs in Germany, or 27 SMEs per 1,000 people. To analyze demand, it is worth noting that there are a larger number of SMEs relative to micro firms due to faster growth and fewer financing obstacles.

As above, we present three different estimates of SME financing demand in Germany for 2013. In Table 3.8, the first column shows variable names; the second uses Method #1 to assess the SME demand; and the third shows the results of Method #2's demand estimation. The fourth and sixth columns show the difference between demand estimates by Methods #1 and #2, and between Methods #1 and #3, respectively. The fifth column shows the results of demand estimation by Method #3, and the seventh column presents definitions and sources of the variables.

The bottom part of Table 3.8 reports the results or the total SME demand estimates calculated using the three different methods for loan demand and the two different sources for equity demand. Hence, by using these different methods and sources, we find that the total SME financing demand in Germany for 2013 was between 14.83% and 19.28% of GDP.

To estimate the loan demand, we multiply the percentage of SMEs needing a loan by the average loan requested (mil EUR) and the number of SMEs. The first two variables were acquired from the ECB SAFE Survey (2013). Details of the exact survey questions are provided in the demand table (Table 3.5). The third variable, the number of SMEs, presents the total number of SMEs in Germany in 2013 (European Commission data).

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[17] In 2013, the share of total outstanding loans to Germany GDP was approximately 39%.

Table 3.4. SME financing supply in France, 2013

SME Loan Supply	Source #1 ECB data	Source #2 IMF data	Definition and sources
A. SME loan supply			
SME Loan Supply (€ mil)	217 257		Def: Total drawn and undrawn credit (credits mobilisés et mobilisables) for SMEs (both independent and belonging to a group), comprised of short-term, medium-term, long-term, finance leases and securitised loans. A bank must inform the Banque de France Central credit register whenever one of its branch offices has granted more than EUR 25 000 to a firm (total outstanding loan). Source: OECD, 2015.
SME Loan Supply as % of GDP	10,28%		
B. Total outstanding loans			Def: The value of all domestic loans by non-financial corporations in all currencies combined at the end of the year. Source: ECB, 2015.
Total outstanding loans (€ mil)	812 854	837 341	Def: Total outstanding loans represents all types of outstanding loans to non-financial corporations (household-related loans are excluded) by commercial banks, credit unions, financial cooperatives, other financial intermediaries and deposit takers. Source: IMF, 2015.
Total outstanding loans as % of GDP	38,46%	39,62%	
C. % of SME outstanding loans to total outstanding loans	26,73%	25,95%	Def: A result of division of (A) by (B).
SME Equity Supply	**EVCA data**		
A. SME equity supply			
SME Equity Supply (€ mil)	680		Def: SME Equity is a sum of Seed, Startup, and Later Stage investments, excluding Buyouts. Source: EVCA, 2015.
SME Equity Supply as % of GDP	0,03%		
B. Total venture capital issued			
Total venture capital issued (€ mil)	8 079		Def: Total Equity is a total value of capital under management of Venture Funds in France. Source: EVCA, 2015.
Total venture capital issued as % of GDP	0,38%		
C. % of SME issued equity to venture funds	8,41%		Def: A result of division of (A) by (B).
Total SME Financing Supply			
Total SME fin. Supply			
Total SME fin. Supply (€ mil)	217 937		Def: The total sum of SME loan supply and SME equity supply. Def: Share of Total SME fin. Supply in GDP.
Total SME fin. Supply as % of GDP	10,31%		
GDP (in € mil)	**2 113 687**		**Source: Eurostat, 2015.**

Table 3.4. SME financing supply in France, 2013 (continued)

	Method #1	Method #2 — 100% of a loan	Method #2 — more than 75% (12% excess demand)	Method #2 — up to 75% (50% excess demand)	Excess Demand #1		Method #3 — Applied and Obtained (with excess demand)	Method #3 — Applied and Got Rejected for a Loan	Excess Demand #2		Definition and sources
SME Loan Demand											
A. % of SME needing a loan											Def: % of SMEs needing a loan - is a share of firms that answered 'Yes' to the SAFE ECB Survey question regarding the neediness for bank of bank loans [equity] in doing business , details in note (1). Source: SAFE ECB (April - Sept, 2014), 2015.
Micro	68,21%				68,21%				68,21%		
Small	71,41%				71,41%				71,41%		
Medium	76,62%				76,62%				76,62%		
(header)	Applied and Obtained a Loan	*Applied and Obtained a Loan*									Def: Average loan demanded (€ mil) is a variable derived from the SAFE ECB Survey (April-Sept, 2014), details in the note (3). In Method #2 in order to derive the excess demand for those firms that applied and did not ge the full loan demanded, we firstly derive the obtained loan weighted average (explained in note (3)) and add additional 12% and 50% of that obtained loan respectively. Table with the full details of mid points and weights is in Appendix Table.... In Method #3 we calculate weights using firms that applied and obtained a loan and firms that applied and got rejected. Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
Weights within groups for Method#1, Method#2 — Micro		81,39%	8,88%	9,73%			69,66%	30,34%			
Small		91,01%	3,96%	5,03%			78,46%	21,54%			
Medium		90,73%	7,45%	1,82%			88,90%	11,10%			
B. Average loan demanded (€ mil)					Weighted average loan demanded				Weighted average loan demanded		Def: Weighted average loan-in Methods #2 and #3 we use within group shares, shares of firms by different loan size obtained, share of firms which obtained and were rejected for a loan, respectively. Average loan demanded (€ mil) - variable derived from the SAFE ECB Survey, details in note (3). In Method #2 we derive excess demand, by adding additional 12% and 50% of a the average loan in corresponding groups (Appendix ??, Table??). Similarly, In Method #3 we calculate weights of firms that applied and obtained a loan, and got rejected (Appendix ??, Table??). Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
Micro	0,15	0,16	0,10	0,22	0,16		0,16	0,19	0,17		
Small	0,32	0,32	0,56	0,19	0,33		0,33	0,40	0,34		
Medium	0,58	0,59	2,10	0,32	0,69		0,69	0,88	0,71		
C. Number of SMEs											
Micro	2 439 919	2 439 919							2 439 919		Def: Number of SMEs - is variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Small	136 364	136 364							136 364		
Medium	21 740	21 740							21 740		
D. SME Loan Demand=A*B*C (€ mil)											Def: SME Loan Demanded is the variable derived as a product of variables A, B, and C in this table.
Micro	247 545				264 948	Diff. between Method #1 and Method #2			281 061	Diff. between Method #1 and Method #3	
Small	31 265				31 806				33 403		
Medium	9 676				11 544				11 887		
Total SME loan demand (€ mil)	**288 486**				**308 298**	**(19 811)**			**326 350**	**(37 864)**	Def: Total SME loan demanded - variable derived as a sum of loans demanded in D. SME loan demanded as % of GDP is equal to the Total SME loan demand divided by GDP (€ mil).
SME loan demand as % of GDP	**13,65%**				**14,59%**	**0,94%**			**15,44%**	**1,79%**	

Table 3.5. SME financing demand in France, 2013

SME Equity Demand						
A. % of SME needing equity						
Micro	25,39%	25,39%				Def: % of SMEs needing equity is a variable derived from the SAFE ECB Survey (April - Sept, 2014), details in note (1). Source: SAFE ECB, 2015.
Small	28,97%	28,97%				
Medium	27,23%	27,23%				
B. Average equity demanded (€ mil)	EVCA data	ECB data				
Micro	1,44	0,15				Def: To derive the variable Average equity demanded - we use two sources. First is European Venture Capital Association data (details in note (4)). As a second method we use the average obtained loans as proxy for demand for equity. We decide to use loans as proxy for equity demanded in order to capture possible variation between demand according to the firm size. Source: EVCA (2015); SAFE ECB (2015).
Small		0,32				
Medium		0,58				
C. Number of SMEs						
Micro	2 439 919	2 439 919				Def: Number of SMEs - is a variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Small	136 364	136 364				
Medium	21 740	21 740				
D. SME Equity Demand=A*B*C (€ mil)						
Micro		92 140				Def: SME Equity Demanded is the variable derived as a product of variables A, B, and C in this table. In the case of using EVCA data to estimate the equity demand we don't make classification of that demand by firm size. Therefore, we use an average of variable A. (% of SMEs needing equity). In case of France that is 27%. In addition, we take the number of small firms as a proxy for potential firms needing equity.
Small	56 884	12 684				
Medium	8 523	3 438				
Total SME equity demand (€ mil)	**65 408**	**108 262**				Def: Total SME equity demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME equity demand as % of GDP	**3,09%**	**5,12%**				

Total SME Financing Demand	Method #1 * When Equity demanded is estimated using EVCA data	Method #2	Excess Demand #1	Method #3	Excess Demand #2	Def: Excess Demand #1, #2 are differences between estimated fin demand using Method#1 and Method#2, #3.
Total SME fin. demand (€ mil)	353 894	373 705	(19 811)	391 758	(37 864)	
% of SME fin. demand as % of GDP	16,74%	17,68%	0,94%	18,53%	1,79%	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
Total SME Financing Demand	* When Equity demanded is estimated using ECB data					
Total SME fin. demand (€ mil)	**396 748**	**416 560**	**(19 811)**	**434 613**	**(37 864)**	
% of SME fin. Demand as % of GDP	**18,77%**	**19,71%**	**0,94%**	**20,56%**	**1,79%**	
GDP (€ mil)	2 113 687	2 113 687		2 113 687		Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.

Notes: (1) The variable represents share of firms that answered "yes" to the SAFE ECB Survey question: "Are the [bank loan, or equity] relevant to your firm, that is, have you used it in the past or considered them in the future?" ; (2) In Method #2 we classify firms that applied and obtained a loan by the size of the loan obtained. To do that we use the question from the SAFE ECB Survey: "If you applied and tried to negotiate for a bank loan over the past 6 months, did you: receive everything; Received most of it (between 75% and 99%0; Only received a limited part of it (between 1% and 74%); Refused because the cost was too high; Was rejected; or Application still pending". In Method #2 we only use the subcategory of first three answers as the full sample ("100% of a loan"; "more than 75% (12% excess demand)"; "up to 74% (50% excess demand)"). Then, we use those weights to weight the response to question from note (1). In Method#3 we use all 6 answers (as the full sample) and group them into two categories (obtained and rejected) accordingly we weight the answers; (3) The variable represents weighted average of the 4 possible answers to the question: "What is the size of the last bank loan that your enterprise obtained or renegotiated in the past 6 months?" Answer to this question is a category variable: (up to € 25K; between € 25K - 100K; between € 100K-250K; more than 250K-1mil; over € 1mil (here upper limit is assumed at € 4 mil)). Next, in order to derive the weighted average of loan demanded we weighted the mid point of these categories with the share of firms that chose that category. The complete tables of weights and category mid points is provided in the Appendix Table... (4) We use European Venture Capital Association (EVCA) to derive average equity demanded. The derived number represents an average of invested venture capital per investment, within a country, in a given year. Venture Capital investments include: Seed, Start-up, Later-stage investments. More details are in Appendix, Table..

Table 3.6. SME financing gap in France, 2013

	Loans			Equity		Total			Definition and Sources
SME Loan Supply									
SME Loan Supply (€ mil)				217 257			217 937		
SME Loan Supply as % of GDP				10,28%			10,31%		
SME Equity Supply									
SME Equity Supply (€ mil)				680					
SME Equity Supply as % of GDP				0,03%					
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Demand						* Equity Demand using EVCA data			
SME Loan Demand (€ mil)	288 486	308 298	326 350			353 894	373 705	391 758	Def: Total SME financing demanded - variable derived as a sum of equity and loan demanded. The calculation
SME Loan Demand as % of GDP	13,65%	14,59%	15,44%			16,74%	17,68%	18,53%	and methods are explained in detail in SME Financing Demand Estimate, 2013. Data used is from ECB SAFE Survey and ECB Country Statistic (2015). SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME Equity Demand				EVCA data	ECB data	* Equity Demand using ECB data			
SME Equity Demand (€ mil)				65 408	108 262	396 748	416 560	434 613	
SME Equity Demand as % of GDP				3,09%	5,12%	18,77%	19,71%	20,56%	
	Loan Gap			**Equity Gap**		**Total Fin Gap**			
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Gap						* Equity Demand sing EVCA data			
Total SME fin. Gap (€ mil)	71 229	91 041	109 093			135 957	155 769	173 821	Def: SME Financing Gap - is derived variable as a difference between estimated SME fin Supply and SME fin Demand for a given year within a given country. Financing Demand is estimated using three different methods, please check note (1). For details, please check the SME Financing Demand Estimate table.
SME fin. Gap as % of GDP	3,37%	4,31%	5,16%			6,43%	7,37%	8,22%	
SME Equity Gap				EVCA data	ECB data	* Equity Demand using ECB data			
Total SME fin. Gap (€ mil)				64 728	107 583	178 812	198 623	216 676	
SME fin. Gap as % of GDP				3,06%	5,09%	8,46%	9,40%	10,25%	
GDP (€ mil)	**2 113 687**			**2 113 687**		**2 113 687**			Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.

Table 3.7. SME financing supply in Germany, 2013 **Table 3.8.** SME financing demand in Germany, 2013

SME Loan Supply	Source #1	Source #2	Definition and sources
	ECB data	IMF data	
A. SME loan supply			
SME Loan Supply (€ mil)	282 000		Def: Due to data limitations, in order to calculate German SME loans outstanding, the share of SME loans in total business loans from 2011 was used. Source: DB Research, 2014.
SME Loan Supply as % of GDP	10,04%		
B. Total outstanding loans			
Total outstanding loans (€ mil)	796 544	810 084	Def: The value of all domestic loans by non-financial corporations in all currencies combined at the end of the year. Source: ECB, 2015.
Total outstanding loans as % of GDP	28,35%	28,83%	Def: Total outstanding loans represents all types of outstanding loans to non-financial corporations (household-related loans are excluded) by commercial banks, credit unions, financial cooperatives, other financial intermediaries and deposit takers. Source: IMF, 2015.
C. % of SME outstanding loans to total outstanding loans	35,40%	34,81%	Def: A result of division of (A) by (B).

SME Equity Supply	EVCA data	
A. SME equity supply		
SME Equity Supply (€ mil)	703	Def: SME Equity is a sum of Seed, Startup, and Later Stage investments, excluding Buyouts. Source: EVCA, 2015.
SME Equity Supply as % of GDP	0,03%	
B. Total venture capital issued		
Total venture capital issued (€ mil)	9 630	Def: Total Equity is a total value of capital under management of Venture Funds in Germany. Source: EVCA, 2015.
Total venture capital issued as % of GDP	0,34%	
C. % of SME issued equity to venture funds	7,30%	Def: A result of division of (A) by (B).

Total SME Financing Supply		
Total SME fin. Supply		
Total SME fin. Supply (€ mil)	282 703	Def: The total sum of SME loan supply and SME equity supply.
Total SME fin. Supply as % of GDP	10,06%	Def: Share of Total SME fin. Supply in GDP.
GDP (in € mil)	2 809 480	Source: Eurostat, 2015.

Notes: (1) The variable represents share of firms that answered "yes" to the SAFE ECB Survey question: "Are the [bank loan, or equity] relevant to your firm, that is, have you used it in the past or considered them in the future?" ; (2) In Method #2 we classify firms that applied and obtained a loan by the size of the loan obtained. To do that we use the question from the SAFE ECB Survey: "If you applied and tried to negotate for a bank loan over the past 6 months, did you: receive everything; Received most of it (between 75% and 99%0; Only received a limited part of it (between 1% and 74%); Refused because the cost was too high; Was rejected; or Application still pending". In Method #2 we only use the subcategory of first three answers as the full sample ("100% of a loan"; "more than 75% (12% excess demand)"; "up to 74% (50% excess demand)"). Then, we use those weights to weight the response to question from note (1). In Method#3 we use all 6 answers (as the full sample) and group them into two categories (obtained and rejected) accordinlgy we weight the answers; (3) The variable represents weighted average of the 4 possible answers to the question: "What is the size of the last bank lloand that your enterprise obtained or renegotiated in the past 6 months?" Answer to this question is a category variable: (up to € 25K; be-tween € 25K - 100K; between € 100K-250K; more than 250K-1mil; over € 1mil (here upper limit is assumed at € 4 mil)). Next, in order to derive the weighted average of loan demanded we weighted the mid point of these categories with the share of firms that chose that category. The complete tables of weights and category mid points is provided in the Appendix Table... (4) We use European Venture Capital Association (EVCA) to derive average equity demanded. The derived number represents an average of invested venture captial per investment, within a country, in a given year. Venture Capital investments include: Seed, Start-up, Later-stage investments. More details are in Appendix, Table..

Table 3.8. SME financing demand in Germany, 2013

		Method #1	Method #2			Excess Demand #1	Method #3		Excess Demand #2	Definition and sources
SME Loan Demand										
A. % of SME needing a loan										Def: % of SMEs needing a loan - is a share of firms that answered 'Yes' to the SAFE ECB Survey question regarding the neediness for bank of bank loans [equity] in doing business , details in note (1). Source: SAFE ECB (April - Sept, 2014), 2015.
	Micro	47,16%				47,16%			47,16%	
	Small	63,36%				63,36%			63,36%	
	Medium	68,24%				68,24%			68,24%	
		Applied and Obtained a Loan	Applied and Obtained a Loan				Applied and Obtained (with excess demand)	Applied and Got Rejected for a Loan		Def: Average loan demanded (€ mil) is a variable derived from the SAFE ECB Survey (April-Sept, 2014), details in the note (3). In Method #2 in order to derive the excess demand for those firms that applied and did not ge the full loan demanded, we firstly derive the obtained loan weighted average (explained in note (3)) and add additional 12% and 50% of that obtained laon respectively. Table with the full details of mid points and weights is in Appendix Table.... In Method #3 we calculate weights using firms that applied and obtained a loan and firms that applied and got rejected. Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
			100% of a loan	more than 75% (12% excess demand)	up to 75% (50% excess demand)					
Weights within groups for Method#1, Method#2	Micro		76,66%	13,95%	9,39%		69,32%	30,68%		
	Small		83,52%	8,57%	7,91%		77,72%	22,28%		
	Medium		91,32%	2,87%	5,81%		95,51%	4,49%		
						Weighted average loan demanded		Weighted average loan demanded		
B. Average loan demanded (€ mil)										Def: Weighted average loan-in Methods #2 and #3 we use within group shares, shares of firms by different loan size obtained, share of firms which obtained and were rejected for a loan, respectivly. Average loan demanded (€ mil) - variable derived from the SAFE ECB Survey, details in note (3). In Method #2 we derive excess demand, by adding additional 12% and 50% of a the average loan in corresponding groups (Appendix ??, Table??). Similarly, In Method #3 we calculate weights of firms that applied and obtained a loan, and got rejected (Appendix ??, Table??). Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
	Micro	0,25	0,25	0,27	1,18	0,34	0,34	0,15	0,28	
	Small	0,48	0,55	0,47	0,57	0,54	0,54	0,51	0,54	
	Medium	1,05	1,21	1,01	1,14	1,20	1,20	0,63	1,18	
C. Number of SMEs										Def: Number of SMEs - is variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
	Micro	1 809 029				1 809 029			1 809 029	
	Small	336 111				336 111			336 111	
	Medium	56 004				56 004			56 004	
D. SME Loan Demand=A*B*C (€ mil)										Def: SME Loan Demanded is the variable derived as a product of variables A, B, and C in this table.
	Micro	215 479				289 930	Difference between Method #1 and Method #2	240 044		Difference between Method #1 and Method #3	
	Small	102 079				115 809		114 319			
	Medium	40 249				45 929		44 939			
Total SME loan demand (€ mil)		**357 807**				**451 667**	**(93 860)**	**399 302**		**(41 495)**	Def: Total SME loan demanded - variable derived as a sum of loans demanded in D. SME loan demanded as % of GDP is equal to the Total SME loan demand divided by GDP (€ mil).
SME loan demand as % of GDP		**12,74%**				**16,08%**	**3,34%**	**14,21%**		**1,48%**	

Table 3.8. SME financing demand in Germany, 2013 (continued)

SME Equity Demand						
A. % of SME needing equity						
Micro	12,56%	12,56%				Def: % of SMEs needing equity is a variable derived from the SAFE ECB Survey (April - Sept, 2014), details in note (1). Source: SAFE ECB, 2015.
Small	15,25%	15,25%				
Medium	13,67%	13,67%				
B. Average equity demanded (€ mil)	EVCA data	ECB data				
Micro	1,00	0,25				Def: To derive the variable Average equity demanded - we use two sources. First is European Vencture Capital Association data (details in note (4)). As a second method we use the average obtained loans as proxy for demand for equity. We decide to use loans as proxy for equity demanded in order to capture possible variation between demand according to the firm size. Source: EVCA (2015); SAFE ECB (2015).
Small		0,48				
Medium		1,05				
C. Number of SMEs						
Micro	1 809 029	1 809 029				Def: Number of SMEs - is a variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Small	336 111	336 111				
Medium	56 004	56 004				
D. SME Equity Demand=A*B*C (€ mil)						
Micro		57 383				Def: SME Equity Demanded is the variable derived as a product of variables A, B, and C in this table. In the case of using EVCA data to estimate the equity demand we don't make classification of that demand by firm size. Therefore, we use an average of variable A. (% of SMEs needing equity). In case of France that is 27%. In addition, we take the number of small firms as a proxy for potential firms needing equity.
Small	51 245	24 563				
Medium	7 655	8 062				
Total SME equity demand (€ mil)	**58 899**	**90 008**				Def: Total SME equity demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME equity demand as % of GDP	**2,10%**	**3,20%**				

Total SME Financing Demand	Method #1	Method #2	Excess Demand #1	Method #3	Excess Demand #2	Def: Excess Demand #1, #2 are as a difference between estimated fin demand using Method#1 and Method#2, #3.
		* When Equity demanded is estimated using EVCA data				
Total SME fin. demand (€ mil)	416 707	510 566	(93 860)	458 202	(41 495)	
% of SME fin. demand as % of GDP	14,83%	18,17%	3,34%	16,31%	1,48%	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
Total SME Financing Demand		* When Equity demanded is estimated using ECB data				
Total SME fin. demand (€ mil)	447 815	541 675	(93 860)	489 310	(41 495)	
% of SME fin. Demand as % of GDP	15,94%	19,28%	3,34%	17,42%	1,48%	
GDP (€ mil)	2 809 480	2 809 480		2 809 480		Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.

Table 3.9. SME financing gap in Germany, 2013

	Loans			Equity		Total			Definition and Sources
SME Loan Supply									
SME Loan Supply (€ mil)	282 000					282 703			Def: Total SME fin. supply - variable derived as a sum of loan and equity supplied. Details are provided in the SME Financing Supply Estimate table . SEM fin. Supply as % of GDP - is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Supply as % of GDP	10,04%					10,06%			
SME Equity Supply									
SME Equity Supply (€ mil)				703					
SME Equity Supply as % of GDP				0,03%					
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Demand						* Equity Demand using EVCA data			
SME Loan Demand (€ mil)	357 807	451 667	399 302			416 707	510 566	458 202	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Demand as % of GDP	16,93%	21,37%	18,89%			14,83%	18,17%	16,31%	
SME Equity Demand			EVCA data	ECB data		* Equity Demand using ECB data			
SME Equity Demand (€ mil)				58 899	90 008	447 815	541 675	489 310	
SME Equity Demand as % of GDP				2,10%	3,20%	15,94%	19,28%	17,42%	
	Loan Gap			**Equity Gap**		**Total Fin Gap**			
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Gap						* Equity Demand sing EVCA data			
Total SME fin. Gap (€ mil)	75 807	169 667	117 302			134 004	227 864	175 499	Def: SME Financing Gap - is derived variable as a difference between estimated SME fin Supply and SME fin Demand for a given year within a given country. All variables needed to estimate the gap are calculated and explained in detail in Supply and Demand tables on previous pages.
SME fin. Gap as % of GDP	2,70%	6,04%	4,18%			4,77%	8,11%	6,25%	
SME Equity Gap			EVCA data	ECB data		* Equity Demand using ECB data			
Total SME fin. Gap (€ mil)				58 197	89 305	165 112	258 972	206 607	
SME fin. Gap as % of GDP				2,07%	3,18%	5,88%	9,22%	7,35%	
GDP (€ mil)	**2 809 480**			**2 809 480**		**2 809 480**			Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.

The results are summarized in the first part of the table, variable A. In terms of importance, they confirm that the share of German SMEs needing a loan increased as the size of the firm increased. The results show that the difference in loan demand was over 20%, favoring medium-sized firms. Less than half of German micro firms indicated that loans were needed and important for their businesses, as opposed to three quarters of German medium-sized firms.

Recall from our earlier estimations that we use three methods to estimate average loan demand. In Method #1, the average loan requested (mil EUR), is equal to the average loan obtained and ranges from EUR 0.25 mil for micro to EUR 1.05 mil for medium firms. The average size of loans obtained in Germany is the highest among the countries in this study. This implies that, on average, German firms receive more financing than the rest of the firms in this study. When multiplied by the share of firms needing a loan (A) and by the number of firms by size (C), we obtain the estimate of the total SME loan demand in Germany: EUR 357,807 mil, or 13.65% of GDP.

There are similarities between the two methods. However, the findings suggest that there exists one difference. In Method #2, we add an additional 12% and 50% to the average loan obtained, depending on the size of the obtained versus the desired loan. We estimate that, in this case, the average loan requested was in the range of EUR 0.34 mil for micro firms and EUR 1.2 mil for medium firms. Using the same multiplication of variables A, B, and C, we estimate that the SME loan demand was over EUR 450 bil, or 16.08% of GDP. We also find the difference between obtained versus desired loans (demand estimated using Method #1 and Method #2) to be over EUR 90 bil, or 3.34% of GDP. This result implies that the German banks are providing SMEs with less financing than demanded.

Finally, in Method #3, we expand the sample of firms used to estimate the average loan requested by adding firms that applied but were rejected for a loan. We estimate the average rejected loan by firm size and weight it by the relative share in the total number of firms that applied. First, we find that the highest share of rejected loans was among micro firms (slightly above 30%) and the lowest share among medium firms (below 5%). At the same time, German rejection rates were at the lowest in the sample of countries in this study. Using Method #3, we estimate that the SME loan demand in Germany for 2013 was over EUR 399 bil, or 14.21% of GDP. The difference between the demand estimated using Method #1 and Method #3 is over EUR 41 bil. The finding shows an undersupplying loans at a rate of 1.48% of GDP. Table 3.8 also shows that the demand estimated, using Method #2, is larger than that found with Method #3, even though Method #3 includes firms that applied and were rejected. This difference is a result of the lower average loan size requested by firms that were rejected, and when the sampling weights are applied, it results in a lower overall average loan.

In the second half of Table 3.8, it is apparent that the share of firms needing equity (A) was similar across different firm sizes. Additionally, we estimate that, using the EVCA data, the total demand for equity was close to EUR 59 bil, or 2.10% of GDP. To estimate the average equity needed, we use the EVCA data and average equity issued at the level of EUR 1.00 mil. As in our earlier estimates, we multiply variables A, B and C to estimate the total equity demanded. We decided to exclude the number of micro firms in this step since the average financing need of this class of firms was unlikely to reach over one mil Euros.

Overall, the evidence shows that, using the ECB data or average obtained loans as a proxy for equity demanded, the total demand for equity at the level of 3.20% of GDP (over EUR 90 bil).

Financing Gap

In this section, we move the analysis to consider the difference between the loan and the equity supply and demand. We begin by summarizing the results of Table 3.9. As noted above, the first column of the table shows the variable names; the second column shows the loan gap; the third column shows the equity gap; the fourth column combines the two and shows the total estimated gap, while the fifth column provides definitions and sources.

In terms of importance, the second column in Table 3.9 shows three different estimates of the loan gap, depending on the demand estimates used. The loan gap ranges from 2.70% to 6.04% of GDP. The third column shows two estimates of the equity gap, which is in the range of 2.07% to 3.18% of GDP.

The results suggest that the estimated loan and equity gap in Germany are similar to the gaps in the other four countries in this study. While the evidence from the US shows an equity gap is in the range of 0.96% to 1.52% of GDP, it is apparent that the gap is almost double in Germany. Moreover, the findings are also in line with the case of France. Overall, the difference between SME equity supply and demand is almost tenfold, implying the need for more equity investment in the SME sector.

The Financing Gap in The Netherlands

Our discussion so far has focused on the loan and equity financing gaps for French and German SMEs. In this section, we estimate the SME financing gap in the Netherlands. Our results are reported in Tables 3.10 through 3.12.

Supply

As in the case of France, the structure of the banking sector has been mainly stable from 2008 to 2013. In contrast, there is ample evidence that the total size of the Dutch banking sector is decreasing (DNB, 2015). At the same time, assets of small and medium-sized credit institutions are increasing relative to large credit institutions. For example, assets of small Dutch credit institutions increased from just over EUR 2 bil in 2008 to more than EUR 18 bil in 2013. Indeed, the total assets of large domestic credit institutions declined marginally. Thus, while the increase in assets of small credit institutions would seem to be an improvement, the growth of bank assets was not sufficient

to compensate for this drop, resulting in an overall decrease in credit institution assets (Appendix 3, Table C3).

Furthermore, Dutch SMEs have limited access to private equity financing. In particular, private equity funds are small in volume relative to the banking sector. Currently, there are in total 125 private equity firms headquartered in the Netherlands. Together the generalist, buyout, and venture capital firms manage over EUR 18 bil (Table 3.11). As in the case of Germany, private equity investments generated 0.26% of GDP.

Table 3.10 reports the supply of SME loans and equity in the Netherlands for 2013. We estimate that the total SME loan and equity supply in the Netherlands for 2013 was EUR 123,318 mil or 19.18% of GDP. The largest share of the supply came from the SME loans (19.15% of GDP), and the remaining part was from equity funding (0.03% of GDP), which is similar to the estimates for France and Germany

The SME loan supply represented EUR 123,318 mil of outstanding SME loans in 2013. We include two data sources to reference the total outstanding loans: the European Central Bank (ECB) and the International Monetary Fund (IMF). A comparison finds no significant difference between the numbers provided by the two sources. Overall, the results indicate the share of outstanding SME loans to total outstanding loans was 38% (Table 3.10)

Demand

The SME financing demand--the sum of the demands of all SMEs in the economy—is important for increasing the options for business investment. According to the 2013 European Commission data, there were over 802,000 registered SMEs in the Netherlands, or 47 SMEs per 1,000 people, which is the highest number of SMEs per 1,000 people among the five countries in this study.

The Dutch Central Bank (2014) reports that many SMEs have been unsuccessful in gaining access to credit from local bank. Table 3.11 shows the three different estimates of SME financing demand in Netherlands for 2013. The table also includes the first variable names (column 1), the Method #1 to assess SME demand (column 2) and the results of Method #2 demand estimation (column 3). In addition, the table also reports the difference between demand estimates by Methods #1 and #2 (column 4) and Methods #1 and 3 (column 6). In column 5, we show the results of the demand estimate by Method #3.

The bottom part of Table 3.11 shows the results of total SME demand estimates calculated using the three different methods for loan demand and two different sources for equity demand. We find that the total SME financing demand in the Netherlands was between 25.89% and 40.83% of GDP.[18]

In order to estimate the loan demand, we multiplied % of SMEs needing a loan by the average loan demanded (mil EUR) and the number of SMEs. The first two variables

were acquired from the ECB SAFE Survey (2013). The details of exact survey questions are provided within the demand table (Table 3.11). The third variable, number of SMEs, presents the total number of SMEs in the Netherlands for 2013 (European Commission data).

In the first part of the table, variable A shows that the share of the Dutch SMEs needing a loan is associated with an increase in firm size. Importantly, the difference in loan demand is over 15% in favor of medium firms: half of Dutch micro firms say that loans are needed and important for their businesses, relative to 65.16% of medium firms.

Again, we use three methods to estimate the average loan demanded. In Method #1, the average loan demanded (mil EUR) is equal to the average loan obtained and ranges from EUR 0.44 mil for micro to EUR 1.61 mil for medium firms. The average loan size obtained is higher than for micro or medium firms in the other Research Countries. This implies that Dutch firms on average receive more financing than the rest of the firms in this study. Thus, when multiplied by the share of firms needing a loan (A) and by the number of firms by size (C), we obtained the estimate of the total SME loan demand: EUR 210,383 mil, or 32.73% of GDP.

In the case of Method #2, we add additional 12% and 50% to the average loan obtained, depending on the size of the obtained versus desired loan. We estimated that in this case, average loan demanded was in the range of EUR 0.49 mil for micro firms and EUR 1.85 mil for medium firms. Using the same multiplication of variables A, B, and C, we estimated that the SME loan demand was EUR 228,172 mil, or 35.49% of GDP. We also found the difference between obtained versus desired loans (demand estimated using Method #1 and Method #2) to be EUR 17,789, or 2.77% of GDP. The key implication is that the Dutch banks are providing SMEs with less financing than is demanded.

Finally, in Method #3, we expanded the firm sample by adding firms that applied for but were rejected for a loan, in order to better estimate the average loan demanded. We estimated the average rejected loan demanded per firm size category and weighed it by the relative share among the total number of firms that applied. First, we found that the highest share of rejected loans was for the micro firms (slightly above 53.68%) and the lowest share for medium firms (under 14.76%).

Using Method #3, we estimated that the SME loan demand in the Netherlands for 2013 was EUR 161,753 mil, or 25.16% of GDP. Table 3.11 also shows that the demand as estimated using Method #1 and Method #2 was larger than demand estimated using Method #3, even though Method #3 included firms that applied and were rejected. This difference is a result of the average loan size demanded by firms was rejected. Column five shows that in each firm size category the average loan demanded was lower

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[18] In the case of the Netherlands, we used the SAFE ECB Survey—wave 1 (for all other Research Countries we used wave 2). The difference between wave 1 and wave 2 is that they were conducted in different periods but in the same year. More specifically, we found that the share of Dutch mirco SMEs that applied for and were rejected from a loan was close to 70%, which is significantly larger than in earlier surveys (Appendix 3). In addition, we found that the relative distribution of firm sizes was more uniformly distributed in wave 1. The demand and gap estimates are available in Appendix 3, Tables D10 and D11.

than the amount of the loans obtained, and those lower loans were weighed against the loans acquired – which in turn produced lower total average loans. However, this also suggests that only higher loan demands received funding. We double checked this finding in the history data and found similar evidence (Appendix 3, Table D8).

In the second half of Table 3.11, we describe the steps and variables used in the equity demand estimation in the Netherlands for 2013. Note that the share of firms needing equity (A) ranges from 8.16% of small firms to 14.45% of medium firms. Using the EVCA data, we estimated that the total demand for equity was EUR 4,680 mil, or 0.73% of GDP. As in the previous cases, we multiplied variables A, B and C to estimate the total equity demanded. We decided to exclude the number of micro firms in this step, since the average financing needing of this class of firms was unlikely to exceed EUR 0.97 mil. Therefore, by using the ECB data or average obtained loans as a proxy for equity demanded, we estimated the total demand for equity to be 5.34% of GDP (EUR 34,323 mil).

Financing Gap

This section provides evidence on the SME financing gap in the Netherlands for 2013 (Table 3.12). Once again, we report the variable names (column 1), loan gap (column 2), equity gap (column 3), total estimated gap (column 4) and the definitions and sources (column 5). In addition, we consider three different estimates of the loan gap, depending on the demand sources and methods used (column 2). The results indicate that the loan gap ranges from 6.01% to 16.34% of GDP. The lower boundary of the loan gap is the highest in the group of Research Countries. In column 3, we present two estimates of the equity gap, which is in the range of 0.7% to 5.31% of GDP. Overall, our results indicate that the Netherlands' equity gap is the lowest of the Research Countries.

The Financing Gap in Poland

In this section, we report the results of estimation of the SME financing gap in Poland. Our findings are reported in Tables 3.13 through 3.15.

Supply

In Poland, the largest assets are held by foreign-controlled subsidiaries and branches. While foreign bank presence may enhance the development of the financial system, SMEs tend to avoid arranging loans in foreign currencies. While large domestic credit institutions are mostly non-existent, the assets of small and medium-sized credit institutions are growing. For example, in 2008, assets of medium-sized credit institutions were close to EUR 65 bil, while in 2013 they grew to over EUR 104 bil (Appendix 3, Table C4).

As we've seen in the other Research Countries, private equity funds are small in volume relative to the banking sector. In 2012, private equity investments generated 0.13% of GDP. Indeed, there are a total of 34 private equity funds headquartered in Poland. The results indicate

that generalist, buyout and venture capital firms manage over EUR 6 bil (Table 3.11).

Table 3.13 includes the supply of SME loans and equity in Poland for 2013. Throughout the analysis, we provide variable names, the two different sources used to assess total supply of financing, and the definitions and sources of variables (Columns 1-4).

We estimated that the total SME loan and equity supply in Poland was EUR 36,416 mil, or 9.19% of GDP, which was the lowest level of SME loan supply among the five countries in this study. In addition, the largest share of the supply comes from SME loans, while the equity supply in Poland is marginal at a level of 0.004% of GDP (EUR 16 mil).

As in earlier estimates, we also used two data sources to reference the total outstanding loans, we found no significant difference between the numbers the two sources provided.[19] Table 3.13 confirms that the share of outstanding SME loans to total outstanding loans was about 58%.

Demand

In this section, we provide evidence on the SME demand for financing. According to the 2013 European Commission data, there were over 1.4 mil registered SMEs in Poland, or 38 SMEs per 1,000 people. It is noteworthy that Poland has a higher proportion of micro SMEs than in the EU overall. Earlier studies show that micro firms are more financially constrained than larger firms and similarly may fail to find external finance. If, as the literature suggests, micro and small business face barriers to arrange loan finance, we expect that there is only limited or weak demand for borrowed funds.

We start by considering three different estimates of SME financing demand in Poland for 2013 (Table 3.14). The first column includes variable names, the second uses Method #1 to assess the SME demand, the third column shows the results of Method #2 demand estimation. The fourth and the sixth columns show the difference between demand estimates by Methods #1 and #2 and Methods #1 and 3, respectively. The fifth column shows the results of demand estimation by Method #3, and finally the seventh column stands for definitions and sources of the variables.

The bottom part of the Table 3.14 shows the results for the total SME demand estimates calculated using the three different methods for loan demand, and two different sources for equity demand. Using these different methods and sources, we found that the total SME financing demand in Poland for 2013 was between 14.64% and 27.41% of GDP.

In order to estimate the loan demand, we multiplied % of SMEs needing a loan by average loan demanded (mil EUR) and the number of SMEs. The first two variables were acquired from the ECB SAFE Survey (2013). Details of the exact survey questions are provided within the demand table (Table 3.14). The third variable, number of SMEs, presents the total number of SMEs in Poland for 2013 (European Commission data).

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[19] In 2013, the share of total outstanding loans to Polish GDP was approximately 16%.

Table 3.10. SME financing supply in the Netherlands, 2013

	Loans			Equity			Total			Definition and Sources
SME Loan Supply										
SME Loan Supply (€ mil)	123 125						123 318			Def: Total SME fin. supply - variable derived as a sum of loan and equity supplied. Details are provided in the SME Financing Supply Estimate table . SEM fin. Supply as % of GDP - is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Supply as % of GDP	19,15%						19,18%			
SME Equity Supply										
SME Equity Supply (€ mil)				193						
SME Equity Supply as % of GDP				0,03%						
	Method#1	Method#2	Method#3				Method #1	Method#2	Method#3	
SME Loan Demand						* Equity Demand using EVCA data				
SME Loan Demand (€ mil)	204 121	298 498	97 094				205 481	299 859	98 454	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Demand as % of GDP	31,75%	46,43%	15,10%				31,96%	46,65%	15,32%	
SME Equity Demand				EVCA data	ECB data	* Equity Demand using ECB data				
SME Equity Demand (€ mil)				1 361	25 617		229 737	324 114	122 710	
SME Equity Demand as % of GDP				0,21%	3,98%		35,74%	50,42%	19,09%	
	Loan Gap			**Equity Gap**			**Total Fin Gap**			
	Method#1	Method#2	Method#3				Method #1	Method#2	Method#3	
SME Loan Gap						* Equity Demand sing EVCA data				Def: SME Financing Gap - is derived variable as a difference between estimated SME fin Supply and SME fin Demand for a given year within a given country. All variables needed to estimate the gap are calculated and explained in detail in Supply and Demand tables on previous pages.
Total SME fin. Gap (€ mil)	80 996	175 373	(26 031)				82 163	176 541	(24 864)	
SME fin. Gap as % of GDP	12,60%	27,28%	-4,05%				12,78%	27,46%	-3,87%	
SME Equity Gap				EVCA data	ECB data	* Equity Demand using ECB data				
Total SME fin. Gap (€ mil)				1 168	25 424		106 419	200 796	(608)	
SME fin. Gap as % of GDP				0,18%	3,95%		16,55%	31,24%	-0,09%	Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.
GDP (€ mil)	642 851			642 851			642 851			

Table 3.11. SME financing demand in the Netherlands, 2013

		Method #1	Method #2 100% of a loan	Method #2 more than 75% (12% excess demand)	Method #2 up to 75% (50% excess demand)	Method #2 (Weighted average) / Excess Demand #1	Excess Demand #1	Method #3 Applied and Obtained (with excess demand)	Method #3 Applied and Got Rejected for a Loan	Method #3 (Weighted average)	Excess Demand #2	Definition and sources
SME Loan Demand												
A. % of SME needing a loan												
	Micro	43,39%				43,39%				43,39%		Def: % of SMEs needing a loan - is a share of firms that answered 'Yes' to the SAFE ECB Survey question regarding the neediness for bank of bank loans [equity] in doing business , details in note (1). Source: SAFE ECB (April - Sept, 2014), 2015.
	Small	52,69%				52,69%				52,69%		
	Medium	58,20%				58,20%				58,20%		
Weights within groups for Method#1, Method#2	(Applied and Obtained a Loan)	Applied and Obtained a Loan	100% of a loan	more than 75% (12% excess demand)	up to 75% (50% excess demand)			Applied and Obtained (with excess demand)	Applied and Got Rejected for a Loan			Def: Average loan demanded (€ mil) is a variable derived from the SAFE ECB Survey (April-Sept, 2014), details in the note (3). In Method #2 in order to derive the excess demand for those firms that applied and did not ge the full loan demanded, we firstly derive the obtained loan weighted average (explained in note (3)) and add additional 12% and 50% of that obtained laon respectively. Table with the full details of mid points and weights is in Appendix Table.... In Method #3 we calculate weights using firms that applied and obtained a loan and firms that applied and got rejected. Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
	Micro		48,56%	0,00%	51,44%			30,47%	69,53%			
	Small		75,78%	8,95%	15,27%			44,45%	55,55%			
	Medium		71,27%	5,97%	22,75%			62,17%	37,83%			
B. Average loan demanded (€ mil)						Weighted average loan demanded				Weighted average loan demanded		Def: Weighted average loan-in Methods #2 and #3 we use within group shares, shares of firms by different loan size obtained, share of firms which obtained and were rejected for a loan, respectivly. Average loan demanded (€ mil) - variable derived from the SAFE ECB Survey, details in note (3). In Method #2 we derive excess demand, by adding additional 12% and 50% of a the average loan in corresponding groups (Appendix ??, Table??). Similarly, In Method #3 we calculate weights of firms that applied and obtained a loan, and got rejected (Appendix ??, Table??). Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
	Micro	0,58	0,01	-	1,67	0,87		1,14	0,24	0,24		
	Small	0,26	0,20	0,70	0,26	0,25		0,30	0,59	0,59		
	Medium	1,91	2,15	0,20	2,39	2,09		1,91	1,32	1,32		
C. Number of SMEs												
	Micro	752 444				752 444				752 444		Def: Number of SMEs - is variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
	Small	41 339				41 339				41 339		
	Medium	8 304				8 304				8 304		
D. SME Loan Demand=A*B*C (€ mil)												
	Micro	189 253				282 929	Difference between Method #1 and Method #2			77 784	Difference between Method #1 and Method #3	Def: SME Loan Demanded is the variable derived as a product of variables A, B, and C in this table.
	Small	5 654				5 473				12 937		
	Medium	9 213				10 096				6 373		
Total SME loan demand (€ mil)		**204 121**				**298 498**	**(94 377)**			**97 094**	**107 027**	Def: Total SME loan demanded - variable derived as a sum of loans demanded in D. SME loan demanded as % of GDP is equal to the Total SME loan demand divided by GDP (€ mil).
SME loan demand as % of GDP		**31,75%**				**46,43%**	**14,68%**			**15,10%**	**16,65%**	

Table 3.11. SME financing demand in the Netherlands, 2013 (continued)

SME Equity Demand						
A. % of SME needing equity						
Micro	5,72%	5,72%				Def: % of SMEs needing equity is a variable derived from the SAFE ECB Survey (April - Sept, 2014), details in note (1). Source: SAFE ECB, 2015.
Small	2,50%	2,50%				
Medium	4,44%	4,44%				
B. Average equity demanded (€ mil)	EVCA data	ECB data				
Micro	0,97	0,57				Def: To derive the variable Average equity demanded - we use two sources. First is European Venture Capital Association data (details in note (4)). As a second method we use the average obtained loans as proxy for demand for equity. We decide to use loans as proxy for equity demanded in order to capture possible variation between demand according to the firm size. Source: EVCA (2015); SAFE ECB (2015).
Small		0,25				
Medium		1,89				
C. Number of SMEs						
Micro	752 444	752 444				Def: Number of SMEs - is a variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Small	41 339	41 339				
Medium	8 304	8 304				
D. SME Equity Demand=A*B*C (€ mil)						
Micro		24 664				Def: SME Equity Demanded is the variable derived as a product of variables A, B, and C in this table. In the case of using EVCA data to estimate the equity demand we don't make classification of that demand by firm size. Therefore, we use an average of variable A. (% of SMEs needing equity). In case of France that is 27%. In addition, we take the number of small firms as a proxy for potential firms needing equity.
Small	1 003	257				
Medium	358	696				
Total SME equity demand (€ mil)	**1 361**	**25 617**				Def: Total SME equity demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME equity demand as % of GDP	**0,21%**	**3,98%**				

	Method #1	Method #2	Excess Demand #1	Method #3	Excess Demand #2	Def: Excess Demand #1, #2 are as a difference between estimated fin demand using Method#1 and Method#2, #3.
Total SME Financing Demand	* When Equity demanded is estimated using EVCA data					
Total SME fin. demand (€ mil)	**205 481**	**299 859**	**(94 377)**	**98 454**	**-**	
% of SME fin. demand as % of GDP	**31,96%**	**46,65%**	**14,68%**	**15,32%**		Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
Total SME Financing Demand	* When Equity demanded is estimated using ECB data					
Total SME fin. demand (€ mil)	**229 737**	**324 114**	**(94 377)**	**122 710**	**-**	
% of SME fin. Demand as % of GDP	**35,74%**	**50,42%**	**14,68%**	**19,09%**		
GDP (€ mil)	642 851	642 851		642 851		Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.

Notes: (1) The variable represents share of firms that answered "yes" to the SAFE ECB Survey question: "Are the [bank loan, or equity] relevant to your firm, that is, have you used it in the past or considered them in the future?" ; (2) In Method #2 we classify firms that applied and obtained a loan by the size of the loan obtained. To do that we use the question from the SAFE ECB Survey: "If you applied and tried to negotate for a bank loan over the past 6 months, did you: receive everything; Received most of it (between 75% and 99%0; Only received a limited part of it (between 1% and 74%); Refused because the cost was too high; Was rejected; or Application still pending". In Method #2 we only use the subcategory of first three answers as the full sample ("100% of a loan"; "more than 75% (12% excess demand)"; "up to 74% (50% excess demand)"). Then, we use those weights to weight the response to question from note (1). In Method#3 we use all 6 answers (as the full sample) and group them into two categories (obtained and rejected) accordinlgy we weight the answers; (3) The variable represents weighted average of the 4 possible answers to the question: "What is the size of the last bank loand that your enterprise obtained or renegotiated in the past 6 months?" Answer to this question is a category variable: (up to € 25K; between € 25K - 100K; between € 100K-250K; more than 250K-1mil; over € 1mil (here upper limit is assumed at € 4 mil)). Next, in order to derive the weighted average of loan demanded we weighted the mid point of these categories with the share of firms that chose that category. The complete tables of weights and category mid points is provided in the Appendix Table... (4) We use European Venture Capital Association (EVCA) to derive average equity demanded. The derived number represents an average of invested venture captial per investment, within a country, in a given year. Venture Capital investments include: Seed, Start-up, Later-stage investments. More details are in Appendix, Table..

Table 3.12. SME financing gap in the Netherlands, 2013

	Loans			Equity		Total			Definition and Sources
SME Loan Supply									
SME Loan Supply (€ mil)	123 125					123 318			Def: Total SME fin. supply - variable derived as a sum of loan and equity supplied. Details are provided in the SME Financing Supply Estimate table . SEM fin. Supply as % of GDP - is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Supply as % of GDP	19,15%					19,18%			
SME Equity Supply									
SME Equity Supply (€ mil)				193					
SME Equity Supply as % of GDP				0,03%					
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Demand					* Equity Demand using EVCA data				
SME Loan Demand (€ mil)	204 121	298 498	97 094			205 481	299 859	98 454	
SME Loan Demand as % of GDP	31,75%	46,43%	15,10%			31,96%	46,65%	15,32%	
SME Equity Demand				EVCA data	ECB data	* Equity Demand using ECB data			Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME Equity Demand (€ mil)				1 361	25 617	229 737	324 114	122 710	
SME Equity Demand as % of GDP				0,21%	3,98%	35,74%	50,42%	19,09%	
	Loan Gap			**Equity Gap**		**Total Fin Gap**			
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Gap					* Equity Demand sing EVCA data				
Total SME fin. Gap (€ mil)	**80 996**	**175 373**	**(26 031)**			**82 163**	**176 541**	**(24 864)**	Def: SME Financing Gap - is derived variable as a difference between estimated SME fin Supply and SME fin Demand for a given year within a given country. All variables needed to estimate the gap are calculated and explained in detail in Supply and Demand tables on previous pages.
SME fin. Gap as % of GDP	**12,60%**	**27,28%**	**-4,05%**			**12,78%**	**27,46%**	**-3,87%**	
SME Equity Gap				EVCA data	ECB data	* Equity Demand using ECB data			
Total SME fin. Gap (€ mil)				**1 168**	**25 424**	**106 419**	**200 796**	**(608)**	
SME fin. Gap as % of GDP				**0,18%**	**3,95%**	**16,55%**	**31,24%**	**-0,09%**	Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.
GDP (€ mil)	642 851			642 851		642 851			

Table 3.13. SME financing supply in Poland, 2013

SME Loan Supply	Source #1 ECB data	Source #2 IMF data	Definition and sources
A. SME loan supply			
SME Loan Supply (€ mil)	36 400		Def: Total SME loans in all currencies (as a part of total proposed loans to enterprises), denominated in the national currency and converted to EUR with average ECB exchange rate for the year 2013. Source: CSO of Poland, Monitoring of Banks, 2013; ECB, 2015; own calculations.
SME Loan Supply as % of GDP	9,19%		
B. Total outstanding loans			Def: The value of all domestic loans by non-financial corporations in all currencies combined at the end of the year. Source: ECB, 2015.
Total outstanding loans (€ mil)	62 360	63 423	Def: Total outstanding loans represents all types of outstanding loans to non-financial corporations (household-related loans are excluded) by commercial banks, credit unions, financial cooperatives, other financial intermediaries and deposit takers. Source: IMF, 2015.
Total outstanding loans as % of GDP	15,74%	16,01%	
C. % of SME outstanding loans to total outstanding loans	58,37%	57,39%	Def: A result of division of (A) by (B).
SME Equity Supply	**EVCA data**		
A. SME equity supply			
SME Equity Supply (€ mil)	16		Def: SME Equity is a sum of Seed, Startup, and Later Stage investments, excluding Buyouts. Source: EVCA, 2015.
SME Equity Supply as % of GDP	0,004%		
B. Total venture capital issued			
Total venture capital issued (€ mil)	547		Def: Total Equity is a total value of capital under management of Venture Funds in Poland. Source: EVCA, 2015.
Total venture capital issued as % of GDP	0,14%		
C. % of SME issued equity to venture funds	2,86%		Def: A result of division of (A) by (B).
Total SME Financing Supply			
Total SME fin. Supply			
Total SME fin. Supply (€ mil)	**36 416**		Def: The total sum of SME loan supply and SME equity supply.
Total SME fin. Supply as % of GDP	**9,19%**		Def: Share of Total SME fin. Supply in GDP.
GDP (in € mil)	396 112		Source: Eurostat, 2015.

Table 3.14. SME financing demand in Poland, 2013

	Method #1	Method #2				Excess Demand #1	Method #3			Excess Demand #2	Definition and sources
SME Loan Demand											
A. % of SME needing a loan											Def: % of SMEs needing a loan - is a share of firms that answered 'Yes' to the SAFE ECB Survey question regarding the neediness for bank of bank loans [equity] in doing business , details in note (1). Source: SAFE ECB (April - Sept, 2014), 2015.
Micro	40,86%				40,86%				40,86%		
Small	57,56%				57,56%				57,56%		
Medium	62,33%				62,33%				62,33%		
	Applied and Obtained a Loan	Applied and Obtained a Loan					Applied and Obtained (with excess demand)	Applied and Got Rejected for a Loan			Def: Average loan demanded (€ mil) is a variable derived from the SAFE ECB Survey (April-Sept, 2014), details in the note (3). In Method #2 in order to derive the excess demand for those firms that applied and did not ge the full loan demanded, we firstly derive the obtained loan weighted average (explained in note (3)) and add additional 12% and 50% of that obtained laon respectively. Table with the full details of mid points and weights is in Appendix Table.... In Method #3 we calculate weights using firms that applied and obtained a loan and firms that applied and got rejected. Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
		100% of a loan	more than 75% (12% excess demand)	up to 75% (50% excess demand)							
Weights within groups for Method#1, Method#2 — Micro		80,14%	9,68%	9,68%			63,19%	36,81%			
Small		89,23%	7,44%	3,33%			71,63%	28,37%			
Medium		88,28%	6,61%	5,11%			88,42%	11,58%			
B. Average loan demanded (€ mil)					Weighted average loan demanded				Weighted average loan demanded		Def: Weighted average loan-in Methods #2 and #3 we use within group shares, shares of firms by different loan size obtained, share of firms which obtained and were rejected for a loan, respectivly. Average loan demanded (€ mil) - variable derived from the SAFE ECB Survey, details in note (3). In Method #2 we derive excess demand, by adding additional 12% and 50% of a the average loan in corresponding groups (Appendix ??, Table??). Similarlly, In Method #3 we calculate weights of firms that applied and obtained a loan, and got rejected (Appendix ??, Table??). Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
Micro	0,07	0,09	0,04	0,12	0,08		0,08	0,19	0,12		
Small	0,28	0,30	0,20	0,09	0,28		0,28	0,92	0,46		
Medium	0,95	1,01	0,76	1,51	1,02		1,02	0,42	0,95		
C. Number of SMEs											
Micro	1 407 427				1 407 427				1 407 427		Def: Number of SMEs - is variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Small	52 676				52 676				52 676		
Medium	14 850				14 850				14 850		
D. SME Loan Demand=A*B*C (€ mil)											
Micro	39 066				48 452	Difference between Method #1 and Method #2			71 853	Difference between Method #1 and Method #3	Def: SME Loan Demanded is the variable derived as a product of variables A, B, and C in this table.
Small	8 352				8 603				14 067		
Medium	8 817				9 464				8 814		
Total SME loan demand (€ mil)	**56 234**				**66 518**	**(10 284)**			**94 733**	**(38 499)**	Def: Total SME loan demanded - variable derived as a sum of loans demanded in D. SME loan demanded as % of GDP is equal to the Total SME loan demand divided by GDP (€ mil).
SME loan demand as % of GDP	**14,20%**				**16,79%**	**2,60%**			**23,92%**	**9,72%**	

Table 3.14. SME financing demand in Poland, 2013

SME Equity Demand						
A. % of SME needing equity						Def: % of SMEs needing equity is a variable derived from the SAFE ECB Survey (April - Sept, 2014), details in note (1). Source: SAFE ECB, 2015.
Micro	6,76%	6,76%				
Small	8,67%	8,67%				
Medium	8,75%	8,75%				
B. Average equity demanded (€ mil)	EVCA data	ECB data				Def: To derive the variable Average equity demanded - we use two sources. First is European Vencture Capital Association data (details in note (4)). As a second method we use the average obtained loans as proxy for demand for equity. We decide to use loans as proxy for equity demanded in order to capture possible variation between demand according to the firm size. Source: EVCA (2015); SAFE ECB (2015).
Micro	0,30	0,07				
Small		0,28				
Medium		0,95				
C. Number of SMEs						Def: Number of SMEs - is a variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Micro	1 407 427	1 407 427				
Small	52 676	52 676				
Medium	14 850	14 850				
D. SME Equity Demand=A*B*C (€ mil)						Def: SME Equity Demanded is the variable derived as a product of variables A, B, and C in this table. In the case of using EVCA data to estimate the equity demand we don't make classification of that demand by firm size. Therefore, we use an average of variable A. (% of SMEs needing equity). In case of France that is 27%. In addition, we take the number of small firms as a proxy for potential firms needing equity.
Micro		6 465				
Small	1 370	1 258				
Medium	390	1 237				
Total SME equity demand (€ mil)	**1 760**	**8 961**				Def: Total SME equity demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME equity demand as % of GDP	**0,44%**	**2,26%**				

Total SME Financing Demand	Method #1	Method #2	Excess Demand #1	Method #3	Excess Demand #2	Def: Excess Demand #1, #2 are as a difference between estimated fin demand using Method#1 and Method#2, #3.
	* When Equity demanded is estimated using EVCA data					
Total SME fin. demand (€ mil)	57 995	68 278	(10 284)	96 493	(38 499)	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
% of SME fin. demand as % of GDP	14,64%	17,24%	2,60%	24,36%	9,72%	
Total SME Financing Demand	* When Equity demanded is estimated using ECB data					
Total SME fin. demand (€ mil)	65 195	75 479	(10 284)	103 694	(38 499)	
% of SME fin. Demand as % of GDP	16,46%	19,05%	2,60%	26,18%	9,72%	Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.
GDP (€ mil)	396 112	396 112		396 112		

Notes: (1) The variable represents share of firms that answered "yes" to the SAFE ECB Survey question: "Are the [bank loan, or equity] relevant to your firm, that is, have you used it in the past or considered them in the future?" ; (2) In Method #2 we classify firms that applied and obtained a loan by the size of the loan obtained. To do that we use the question from the SAFE ECB Survey: "If you applied and tried to negotate for a bank loan over the past 6 months, did you: receive everything; Received most of it (between 75% and 99%0; Only received a limited part of it (between 1% and 74%); Refused because the cost was too high; Was rejected; or Application still pending". In Method #2 we only use the subcategory of first three answers as the full sample ("100% of a loan"; "more than 75% (12% excess demand)"; "up to 74% (50% excess demand)"). Then, we use those weights to weight the response to question from note (1). In Method#3 we use all 6 answers (as the full sample) and group them into two categories (obtained and rejected) accordinlgy we weight the answers; (3) The variable represents weighted average of the 4 possible answers to the question: "What is the size of the last bank loand that your enterprise obtained or renegotiated in the past 6 months?" Answer to this question is a category variable: (up to € 25K; between € 25K - 100K; between € 100K-250K; more than 250K-1mil; over € 1mil (here upper limit is assumed at € 4 mil)). Next, in order to derive the weighted average of loan demanded we weighted the mid point of these categories with the share of firms that chose that category. The complete tables of weights and category mid points is provided in the Appendix Table... (4) We use European Venture Capital Association (EVCA) to derive average equity demanded. The derived number represents an average of invested venture captial per investment, within a country, in a given year. Venture Capital investments include: Seed, Start-up, Later-stage investments. More details are in Appendix, Table..

Regarding firm-specific control variables, in Table 3.14, we find that the share of Polish SMEs needing a loan increases as the size of the firm increases. In line with expectations, we find that the difference in loan demand is over 20% in favor of medium firms.

The first half of Table 3.14 provides different estimations of SME loan demand. Method #1, average loan demanded (mil EUR), is equal to the average loan obtained and ranges from EUR 0.07 mil for micro to EUR 0.95 mil for medium firms. When multiplied by the share of firms needing a loan (A) and with the number of firms by size (C), we obtained the estimate of the total SME loan demand in Poland: EUR 56,234 mil, or 14.20% of GDP.

In Method #2, we added an additional 12% and 50% to average loan obtained, depending on the size of the obtained versus desired loan. We estimated that, in this case, the average loan demanded was in the range of 0.08 mil EUR for micro firms and 1.02 mil EUR for medium firms. Using the same multiplication of variables A, B, and C, we estimated that the SME loan demand was over 66 bil EUR, or 16.79% of GDP. We also found the difference between loans obtained and those desired (demand estimated using Method #1 and Method #2) was over EUR 10 bil, or 2.60% of GDP. This result implies that the Polish banks are providing SMEs with less financing than demanded.

In Method #3, we expanded the sample of firms by adding firms that applied for but were rejected for a loan, in order to better estimate the average loan demanded. We estimated the average rejected loan demanded by firm size and weighed it by the relative share in the total number of firms that applied. First, we found the highest share of rejected loans to be among the micro firms (close to 37%) and the lowest share among the medium firms (below 12%). Polish rejection rates are similar to French or German rejection rates. Using Method #3 we estimated that the SME loan demand in Poland for 2013 was over 94 bil EUR, or 23.92% of GDP. The difference between the demands estimated using Method #1 and Method #3 was over EUR 38 bil. In sum, the result implies that the Polish banks are undersupplying loans at a rate of 9.72% of GDP. This result is mainly driven by the significant amount of rejected loans among micro and small firms (EUR 0.19 mil and 0.92 mil).

The second half of Table 3.14 reports the steps and variables used in the equity demand estimation in Poland for 2013. The share of firms needing equity (A) was similar across different firm sizes, ranging between 6.76% and 8.75% of firms.

Using the EVCA data, we estimated that the total demand for equity was close to EUR 2 bil, or 0.44% of GDP. To estimate the average equity needed we used the EVCA data and average equity issued at the level of EUR 0.30 mil. As in the previous estimation cases, we multiplied variables A, B and C to estimate the total equity demanded. We decided to exclude the number of micro firms in this step, because the average financing need for this class of firms was unlikely to exceed one mil Euros.

Thus, using the ECB data or average obtained loans as a proxy for equity demanded, we estimated the total de-mand for equity to be 2.26% of GDP (8.96 bil EUR).

Financing Gap

Table 3.15 shows that the SME financing gap measures the difference between the loan and the equity supply and demand. The first column of the table includes the variable names, the second column shows the loan gap, the third column shows the equity gap, the fourth column combines the two and shows the total estimated gap, while the fifth column provides definitions and sources.

The second column shows three different estimates of the loan gap, depending on the demand estimates used. The loan gap ranges from 5.01% to 14.73% of GDP. The third column shows two estimates of the equity gap, which is in the range of 0.44% to 2.26% of GDP.

As expected, the estimated loan and equity gap in Poland is similar to the gaps seen in the other four countries in this study. As in the case of France, the supply and demand of SME equity in Poland versus that in US is almost tenfold. This result implies that Polish investors find fewer opportunities among SMEs to contribute to increases in productivity and innovation.

The Financing Gap in Romania

In this section, we report the results of estimation of the SME financing gap in Romania. Our findings are reported in Tables 4.16 through 4.18.

Supply

In line with recent developments in Germany and Poland, the Romanian banking system decreased marginally between 2008 to 2013. As in Poland, the largest assets are held by foreign-controlled subsidiaries and branches. Moreover, the assets of these credit institutions grew during this period o EUR 73 bil. At the same time, large domestic credit institutions are non-existent, while assets of small and medium-sized credit institutions are decreasing. For example, assets of medium-sized credit institutions were over EUR 9 bil in 2008, whereas by 2013 they had dropped to EUR 6 bil (Appendix C, Table C5).

Prior research indicates that private equity has played a limited role in funding loans for SMEs. To understand the practice in more detail, it should be noted that private equity funds are marginal in volume relative to the banking sector. In fact, private equity investments generated only 0.02% of GDP in 2012. Moreover, there are a total of 3 private equity funds headquartered in Romania. The findings suggest that private equity remains marginal, with the generalist, buyout and venture capital firms managing about EUR 190 mil (Table 3.11).

To gain further insights on the financing gap, Table 3.16 shows the supply of SME loans and equity in 2013. The first column of the table provides variable names, the second and third columns show two different sources used to assess total supply of financing, and finally the fourth column provides definitions and sources of variables identified in the first column.

Table 3.15. SME financing gap in Poland, 2013

	Loans			Equity		Total			Definition and Sources
SME Loan Supply									
SME Loan Supply (€ mil)	36 400					36 400			Def: Total SME fin. supply - variable derived as a sum of loan and equity supplied. Details are provided in the SME Financing Supply Estimate table . SEM fin. Supply as % of GDP - is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Supply as % of GDP	9,19%					9,19%			
SME Equity Supply									
SME Equity Supply (€ mil)				16					
SME Equity Supply as % of GDP				0,00%					
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Demand						* Equity Demand using EVCA data			
SME Loan Demand (€ mil)	56 234	66 518	94 733			57 995	68 278	96 493	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Demand as % of GDP	14,20%	16,79%	23,92%			14,64%	17,24%	24,36%	
SME Equity Demand			EVCA data	ECB data		* Equity Demand using ECB data			
SME Equity Demand (€ mil)			1 760	8 961		65 195	75 479	103 694	
SME Equity Demand as % of GDP			0,44%	2,26%		16,46%	19,05%	26,18%	

Loan Gap			**Equity Gap**		**Total Fin Gap**				
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Gap						* Equity Demand sing EVCA data			
Total SME fin. Gap (€ mil)	19 834	30 118	58 333			21 595	31 878	60 093	Def: SME Financing Gap - is derived variable as a difference between estimated SME fin Supply and SME fin Demand for a given year within a given country. All variables needed to estimate the gap are calculated and explained in detail in Supply and Demand tables on previous pages.
SME fin. Gap as % of GDP	5,01%	7,60%	14,73%			5,45%	8,05%	15,17%	
SME Equity Gap			EVCA data	ECB data		* Equity Demand using ECB data			
Total SME fin. Gap (€ mil)			1 744	8 945		28 795	39 079	67 294	
SME fin. Gap as % of GDP			0,44%	2,26%		7,27%	9,87%	16,99%	Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.
GDP (€ mil)		396 112		396 112			396 112		

Table 3.16. SME financing supply in Romania, 2013

SME Loan Supply	Source #1 ECB data	Source #2 IMF data	Definition and sources
A. SME loan supply			Def: Loans granted by banks to SMEs in national currency (data refer to exposures higher than 20,000 lei) and converted to EUR with average ECB exchange rate for the year 2013. The data was provided by National Bank of Romania. Source: Ministry of Public Finance of Romania, Central Credit Register, 2015.
SME Loan Supply (€ mil)	19 129		
SME Loan Supply as % of GDP	13,26%		
B. Total outstanding loans			Def: The value of all domestic loans by non-financial corporations in all currencies combined at the end of the year. Source: ECB, 2015.
Total outstanding loans (€ mil)	25 133	29 783	Def: Total outstanding loans represents all types of outstanding loans to non-financial corporations (household-related loans are excluded) by commercial banks, credit unions, financial cooperatives, other financial intermediaries and deposit takers. Source: IMF, 2015.
Total outstanding loans as % of GDP	17,42%	20,64%	
C. % of SME outstanding loans to total outstanding loans	76,11%	64,23%	Def: A result of division of (A) by (B).
SME Equity Supply	EVCA data		
A. SME equity supply			Def: SME Equity is a sum of Seed, Startup, and Later Stage investments, excluding Buyouts. Source: EVCA, 2015.
SME Equity Supply (€ mil)	3		
SME Equity Supply as % of GDP	0,002%		
B. Total venture capital issued			Def: Total Equity is a total value of capital under management of Venture Funds in Romania. Source: EVCA, 2015.
Total venture capital issued (€ mil)	11		
Total venture capital issued as % of GDP	0,01%		
C. % of SME issued equity to venture funds	27,09%		Def: A result of division of (A) by (B).
Total SME Financing Supply			
Total SME fin. Supply			
Total SME fin. Supply (€ mil)	19 132		Def: The total sum of SME loan supply and SME equity supply.
Total SME fin. Supply as % of GDP	13,26%		Def: Share of Total SME fin. Supply in GDP.
GDP (in € mil)	144 282		Source: Eurostat, 2015.

Table 3.17. SME financing demand in Romania, 2013

	Method #1	Method #2			Excess Demand #1	Method #3		Excess Demand #2	Definition and sources
SME Loan Demand									
A. % of SME needing a loan									Def: % of SMEs needing a loan - is a share of firms that answered 'Yes' to the SAFE ECB Survey question regarding the neediness for bank of bank loans [equity] in doing business, details in note (1). Source: SAFE ECB (April - Sept, 2014), 2015.
Micro	34,80%				34,80%			34,80%	
Small	42,87%				42,87%			42,87%	
Medium	52,68%				52,68%			52,68%	

	Applied and Obtained a Loan	Applied and Obtained a Loan				Applied and Obtained (with excess demand)	Applied and Got Rejected for a Loan		Definition and sources
		100% of a loan	more than 75% (12% excess demand)	up to 75% (50% excess demand)					Def: Average loan demanded (€ mil) is a variable derived from the SAFE ECB Survey (April-Sept, 2014), details in the note (3). In Method #2 in order to derive the excess demand for those firms that applied and did not ge the full loan demanded, we firstly derive the obtained loan weighted average (explained in note (3)) and add additional 12% and 50% of that obtained laon respectively. Table with the full details of mid points and weights is in Appendix Table.... In Method #3 we calculate weights using firms that applied and obtained a loan and firms that applied and got rejected. Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
Weights within groups for Method#1, Method#2 Micro		68,50%	15,75%	15,75%		56,27%	43,73%		
Small		55,00%	17,56%	27,44%		81,90%	18,10%		
Medium		89,51%	3,36%	7,13%		75,46%	24,54%		

	Method #1	Method #2			Weighted average loan demanded	Method #3		Weighted average loan demanded	Definition and sources
B. Average loan demanded (€ mil)									Def: Weighted average loan-in Methods #2 and #3 we use within group shares, shares of firms by different loan size obtained, share of firms which obtained and were rejected for a loan, respectivly. Average loan demanded (€ mil) - variable derived from the SAFE ECB Survey, details in note (3). In Method #2 we derive excess demand, by adding additional 12% and 50% of a the average loan in corresponding groups (Appendix ??, Table??). Similarlly, In Method #3 we calculate weights of firms that applied and obtained a loan, and got rejected (Appendix ??, Table??). Average loans for both categories in Method#3 were calculated as explained in note (3). Source: SAFE ECB, 2015.
Micro	0,09	0,08	0,20	0,02	0,09	0,09	0,04	0,07	
Small	0,44	0,39	0,10	1,14	0,54	0,54	0,11	0,47	
Medium	0,70	0,78	0,07	0,18	0,71	0,71	1,11	0,81	

	Method #1	Method #2			Excess Demand #1	Method #3		Excess Demand #2	Definition and sources
C. Number of SMEs									Def: Number of SMEs - is variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Micro	373 944				373 944			373 944	
Small	44 682				44 682			44 682	
Medium	7 669				7 669			7 669	
D. SME Loan Demand=A*B*C (€ mil)									Def: SME Loan Demanded is the variable derived as a product of variables A, B, and C in this table.
Micro	11 077				11 630	Difference between Method #1 and Method #2		8 898	Difference between Method #1 and Method #3
Small	8 429				10 421			8 909	
Medium	2 846				2 878			3 273	
Total SME loan demand (€ mil)	**22 352**				**24 928**	**(2 577)**		**21 080**	**1 272**	Def: Total SME loan demanded - variable derived as a sum of loans demanded in D. SME loan demanded as % of GDP is equal to the Total SME loan demand divided by GDP (€ mil).
SME loan demand as % of GDP	**15,49%**				**17,28%**	**1,79%**		**14,61%**	**0,88%**	

Table 3.17. SME financing demand in Romania, 2013 (continued)

SME Equity Demand						
A. % of SME needing equity						Def: % of SMEs needing equity is a variable derived from the SAFE ECB Survey (April - Sept, 2014), details in note (1). Source: SAFE ECB, 2015.
Micro	12,05%	12,05%				
Small	14,57%	14,57%				
Medium	5,10%	5,10%				
B. Average equity demanded (€ mil)	EVCA data	ECB data				Def: To derive the variable Average equity demanded - we use two sources. First is European Vencture Capital Association data (details in note (4)). As a second method we use the average obtained loans as proxy for demand for equity. We decide to use loans as proxy for equity demanded in order to capture possible variation between demand according to the firm size. Source: EVCA (2015); SAFE ECB (2015).
Micro	2,73	0,09				
Small		0,44				
Medium		0,70				
C. Number of SMEs						Def: Number of SMEs - is a variable counting absolute number of firms classified as SMEs in France in 2013. For exact definition of firm's class size check Appendix 2. Source: European Central Bank, 2015.
Micro	373 944	373 944				
Small	44 682	44 682				
Medium	7 669	7 669				
D. SME Equity Demand=A*B*C (€ mil)						Def: SME Equity Demanded is the variable derived as a product of variables A, B, and C in this table. In the case of using EVCA data to estimate the equity demand we don't make classification of that demand by firm size. Therefore, we use an average of variable A. (% of SMEs needing equity). In case of France that is 27%. In addition, we take the number of small firms as a proxy for potential firms needing equity.
Micro		3 834				
Small	17 770	2 864				
Medium	1 068	276				
Total SME equity demand (€ mil)	**18 839**	**6 974**				Def: Total SME equity demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
SME equity demand as % of GDP	**13,06%**	**4,83%**				

	Method #1	Method #2	Excess Demand #1	Method #3	Excess Demand #2	Def: Excess Demand #1, #2 are as a difference between estimated fin demand using Method#1 and Method#2, #3.
Total SME Financing Demand	* When Equity demanded is estimated using EVCA data					
Total SME fin. demand (€ mil)	41 190	43 767	(2 577)	39 918	-	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil).
% of SME fin. demand as % of GDP	28,55%	30,33%	1,79%	27,67%		
Total SME Financing Demand	* When Equity demanded is estimated using ECB data					
Total SME fin. demand (€ mil)	29 326	31 902	(2 577)	28 054	-	Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.
% of SME fin. Demand as % of GDP	20,33%	22,11%	1,79%	19,44%		
GDP (€ mil)	144 282	144 282		144 282		

Notes: (1) The variable represents share of firms that answered "yes" to the SAFE ECB Survey question: "Are the [bank loan, or equity] relevant to your firm, that is, have you used it in the past or considered them in the future?" ; (2) In Method #2 we classify firms that applied and obtained a loan by the size of the loan obtained. To do that we use the question from the SAFE ECB Survey: "If you applied and tried to negotiate for a bank loan over the past 6 months, did you: receive everything; Received most of it (between 75% and 99%0; Only received a limited part of it (between 1% and 74%); Refused because the cost was too high; Was rejected; or Application still pending". In Method #2 we only use the subcategory of first three answers as the full sample ("100% of a loan"; "more than 75% (12% excess demand)"; "up to 74% (50% excess demand)"). Then, we use those weights to weight the response to question from note (1). In Method#3 we use all 6 answers (as the full sample) and group them into two categories (obtained and rejected) accordinlgy we weight the answers; (3) The variable represents weighted average of the 4 possible answers to the question: "What is the size of the last bank loand that your enterprise obtained or renegotiated in the past 6 months?" Answer to this question is a category variable: (up to € 25K; between € 25K - 100K; between € 100K-250K; more than 250K-1mil; over € 1mil (here upper limit is assumed at € 4 mil)). Next, in order to derive the weighted average of loan demanded we weighted the mid point of these categories with the share of firms that chose that category. The complete tables of weights and category mid points is provided in the Appendix Table... (4) We use European Venture Capital Association (EVCA) to derive average equity demanded. The derived number represents an average of invested venture captial per investment, within a country, in a given year. Venture Capital investments include: Seed, Start-up, Later-stage investments. More details are in Appendix, Table..

Table 3.18. SME financing gap in Romania, 2013

	Loans			Equity		Total			Definition and Sources
SME Loan Supply									
SME Loan Supply (€ mil)	19 129					19 132			Def: Total SME fin. supply - variable derived as a sum of loan and equity supplied. Details are provided in the SME Financing Supply Estimate table . SEM fin. Supply as % of GDP - is equal to the Total SME equity demand divided by GDP (€ mil).
SME Loan Supply as % of GDP	13,26%					13,26%			
SME Equity Supply									
SME Equity Supply (€ mil)				3					
SME Equity Supply as % of GDP				0,00%					
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Demand						* Equity Demand using EVCA data			
SME Loan Demand (€ mil)	22 352	24 928	21 080			41 190	43 767	39 918	Def: Total SME financing demanded - variable derived as a sum of equity demanded in D. SME equity demanded as % of GDP is equal to the Total SME equity demand divided by GDP (€ mil). We used average issued equity capital to SMEs in order to the Equity Demand in Romania (for details check the Demand estimation section). However, in Romania we have very few data points to claim that 2.73 € mil is an average. Therefore, we recommend to take this estimated demand as the utmost upper bound of equity demand in Romania.
SME Loan Demand as % of GDP	15,49%	17,28%	14,61%			28,55%	30,33%	27,67%	
SME Equity Demand				EVCA data	ECB data	* Equity Demand using ECB data			
SME Equity Demand (€ mil)				18 839	6 974	29 326	31 902	28 054	
SME Equity Demand as % of GDP				13,06%	4,83%	20,33%	22,11%	19,44%	
	Loan Gap			**Equity Gap**		**Total Fin Gap**			
	Method#1	Method#2	Method#3			Method #1	Method#2	Method#3	
SME Loan Gap						* Equity Demand sing EVCA data			Def: SME Financing Gap - is derived variable as a difference between estimated SME fin Supply and SME fin Demand for a given year within a given country. All variables needed to estimate the gap are calculated and explained in detail in Supply and Demand tables on previous pages.
Total SME fin. Gap (€ mil)	3 222	5 799	1 950			22 058	24 635	20 786	
SME fin. Gap as % of GDP	2,23%	4,02%	1,35%			15,29%	17,07%	14,41%	
SME Equity Gap				EVCA data	ECB data	* Equity Demand using ECB data			
Total SME fin. Gap (€ mil)				18 836	6 971	10 193	12 770	8 922	
SME fin. Gap as % of GDP				13,05%	4,83%	7,06%	8,85%	6,18%	Def: GDP (Gross Domestic Product) in current € in millions. Source: ECB, 2015.
GDP (€ mil)		144 282		144 282		144 282			

With respect to the available supply, we estimated that the total SME loan and equity supply was EUR 19,132 mil, or 13.26% of GDP, which is the highest relative share of financing supply among the five countries in this study. The largest share of the supply comes from SME loans, while the equity supply in Romania is marginal at the level of 0.002% of GDP (EUR 3 mil).

As with other estimates, we used two data sources to reference the total outstanding loans: the European Central Bank (ECB) and the International Monetary Fund (IMF). We found no significant difference between the numbers provided by the two sources. In 2013, the share of outstanding SME loans to total outstanding loans was between 65% and 76%, this being the highest relative share among the five countries in this study (Table 3.16).

Demand

So far, we have estimated the loan and equity supply. The focus here is to estimate SME financing demand, which is defined as the sum of all SME demand is in the economy. According to the 2013 European Commission data, there were over 426,000 registered SMEs in Romania, or 21 SMEs per 1,000 people.

Table 3.17 shows three different estimates of SME financing demand. The first column includes variable names; the second column uses Method #1 to assess the SME demand; the third column shows the results of the Method #2 demand estimation; the fourth and sixth columns show the difference between demand estimates by Method #1 and #2 and Method #1 and #3, respectively; the fifth column shows the results of the demand estimation using Method #3; and the seventh column presents definitions and sources of the variables.

The bottom part of Table 3.17 shows the results for the total SME demand estimates calculated using the three different methods for loan demand and the two sources for equity demand. Overall, using these different methods and sources, we find that the total SME financing demand in Romania for 2013 was between 20.33% and 30.33% of GDP.

In order to estimate the loan demand, we multiply the percentage of SMEs needing a loan by the average loan requested (mil EUR) and the number of SMEs.78 The first two variables were acquired from the ECB SAFE Survey (2013). Details of the exact survey questions are provided within the demand table (Table 3.17). The third variable, the number of SMEs, presents the total number of SMEs in Romania for 2013 (European Commission data).

In the first part of the table, variable A shows that the share of Romanian SMEs needing a loan increases as the size of the firm increases. The difference in loan demand is below 20%, favoring medium-sized firms.

With Method #1, the average loan requested (mil EUR) is equal to the average loan obtained and ranges from EUR 0.09 mil for micro to EUR 0.70 mil for medium firms. The estimate of the total SME loan demand of EUR 22,352 mil, or 15.49% of GDP is derived by multiplying the share of firms needing a loan (A) and by the number of firms by size (C).

Method #2 introduced an additional 12% and 50% to the average loan obtained, depending on the size of the obtained versus the desired loan. We estimate that, in this case, the average loan requested was in the range of EUR 0.09 mil for micro firms and EUR 0.71 mil for medium firms. Using the same multiplication of variables A, B, and C, we estimate that the SME loan demand was over EUR 24 bil, or 17.28% of GDP. We also find the difference between obtained versus desired loans (demand estimated using Method #1 and Method #2) to be over EUR 2.5 bil, or 1.79% of GDP. This result implies that the Romanian banks were providing SMEs with less financing than is requested.

To estimate the average loan requested, we expand the sample of firms in Method #3 by including those that applied for but were rejected for a loan. We estimate the average rejected loan requested by firm size and weight it by the relative share of all firms that applied. First, we find that the highest share of rejected loans was among the micro firms (more than 43%), and the lowest share was among the small firms (under 19%). Surprisingly, Table 3.17 shows that medium-sized firms had a higher rejection rate than small firms had. Using Method #3, we estimate that the SME loan demand in Romania for 2013 was over EUR 21 bil, or 14.61% of GDP. The difference between the demands estimated using Method #1 and Method #3 is EUR 1,272 mil. This result implies that the Romanian banks were undersupplying loans at a rate of 0.88% of GDP. As in Germany, the average loan rejected is smaller than the average loan obtained or desired. Therefore, the demand for loans estimated using Methods #1 and #2 is larger than the demand estimated using Method #3.

The second half of Table 3.17 shows the steps and variables used in the equity demand estimation for Romania for 2013. The share of firms needing equity (A) is much larger for micro (12.05%) and small firms (14.57%) than it is for medium ones (5.10%).

Using the EVCA data, we estimate that the total demand for equity was close to EUR 18 bil, or 13.06% of GDP. However, this result is based on a high average equity demanded, estimated using EVCA data: the average equity issued in 2013 was EUR 2.93 mil. This, however, is not an average but, rather, the amount of the only issued equity in 2013 recorded by EVCA. We lower this estimation to EUR 2.73 mil by taking the average of all equity issued in Romania between 2008 to 2013. However, this approach does not solve the problem of the artificially inflated demand for equity since there are just a few cases of equity issued in Romania during this period.

We find, using the ECB data or average obtained loans as a proxy for equity, the total demand for equity at 4.83% of GDP (EUR 6,974 mil).

Financing Gap

Table 3.18 shows the SME financing gap in Romania for 2013 as a difference between the loan and the equity supply and demand. The first column of the table shows the variable names; the second column shows the loan gap;

the third column shows the equity gap; the fourth column combines the two and shows the total estimated gap; and the fifth column provides definitions and sources.

The second column shows three different estimates of the loan gap, depending on the demand estimates used. The loan gap ranges from 1.35% to 4.02% of GDP. The third column shows two estimates of the equity gap, which is approximately 4.83% of GDP.

The estimated loan and equity gaps in Romania are similar to the gaps seen in the other four countries in this study. As in France, the difference between supply and demand for SME equity is almost tenfold that of the US. This result implies that Romanian investors find fewer opportunities among SMEs.

Confidence in Financiers and SMEs' Financing Preferences across the Research Countries

In this section, we extend our analysis of calculating the financial gap in each country by examining firms' attitudes towards different financiers and their approach vis-à-vis financial venues to cover their needs. These data give us a glimpse about what firms think about available financing and, ultimately, the significant financial gap they face.

Figures 3.7 and 3.8 show the distribution of firms by confidence level when talking to banks or venture capital funds. Figure 3.7 indicates that confidence increases with firm size, and this result is robust across all countries. We also observe that in Germany, France and the Netherlands, more than half of firms, regardless of size, feel confident talking with banks. Looking at Poland and Romania, this is not the case, especially for micro and small firms. This could be interpreted as a result of higher bank sector competition in France, Germany and the Netherlands relative to that in Poland and Romania.

Figure 3.7 shows that Poland has the largest difference between micro and medium firms by confidence, with the share of confident firms at 43% and 69%, respectively. This implies that Polish banks have a strong preference for medium-sized firms due to the lower risks associated with better signaling from the firms themselves regarding potential business risks. Furthermore, Fig 3.7 shows that Romania stands out as the only country in which the share of micro firms that have no confidence is higher than the share that have confidence.

Figure 3.8 shows the distribution of firms by confidence level when the firms talk to venture capital firms (VCs). For all the five countries, the majority of firms do not talk at all with VCs. This analysis confirms previous results that VCs may need to become more accessible to SMEs, especially in light of evidence that SMEs' demand for equity is much greater than their confidence level.

Focusing on the micro and small firms that talk with VCs, the majority have no confidence or believe that they will not obtain the desired results when talking to investors. Similarly, this holds for medium-sized companies—except in the Netherlands and Romania, where the share of me-

dium firms that have confidence is larger than the share of those that do not.

According to the European Commission, there is a significant increase in SMEs that expect to grow (increasing from 47% in 2009 to 61% in 2014). A consequence of high growth expectations is the expectation for financing, which serves to facilitate that growth. Figure 3.9 shows the distribution of firms by their growth expectations. Micro SMEs in Poland and Romania are the most optimistic firms, with a growth expectation of more than 20%. Growth expectation below 20% seems to be most common among SMEs, except for those in France. In France, most of the micro and small firms expect to remain stagnate after the weak recovery after the financial crisis. At the same time, France has the highest share of firms that expect to downsize in the near future.

Once we identify the firms that expect to grow after 2013 and beyond, we analyze the preferred means of external growth financing and the expected size of that financing. We also analyze the major obstacles to firms that choose loans and equity as their preferred means of growth financing. Figure 3.10 shows that, for the most firms in our study, the preferred means of external growth financing is bank loans. This is particularly the case for firms in France and Germany, where almost three quarters of firms of all sizes prefer bank loans. In the Netherlands, Poland and Romania, the preference for bank loans is not as prevalent. In addition, Figure 3.10 shows that, in those cases, the alternatives to bank loans are 'other loan' or 'other' forms of financing, not equity. This result suggests that bank loans and equity are not perceived as supplements in the SME demand equation. Figure 3.10 also shows that the share of firms that prefer equity as a way of financing is similarly distributed across different countries and firm size, ranging from 3% to 10% of firms. This result contrasts with the demand findings analyzed earlier; there, the survey showed that the share of firms needing equity is much larger than the share of firms needing equity specifically to finance growth. These observations need further analysis, but at this point, we can hypothesize that the understanding how equity can serve SMEs needs more institutional support for providing information. Figure 3.10 shows the distribution of external financing size across firms and countries. The figure shows that, in line with our expectations, larger firms demand more financing.

Figure 3.12 shows that only the majority of German firms think that there are no obstacles to acquiring bank loans to finance growth. In France and the Netherlands, the majority of firms – but not as many firms as in Germany – also perceive a lack of obstacles. Polish and Romanian firms, on the other hand, find many obstacles to financing growth with a bank loan.

Figure 3.12 documents that the most frequent obstacle to German and French SMEs is insufficient collateral, while for Polish and Romanian SMEs, it is paperwork. The second most frequent obstacle indicated by Polish and Romanian SMEs is a high interest rate, which is a signal of local bank protection in the presence of higher market risks.

Figure 3.7. Distribution of firms by confidence when talking with banks about financing
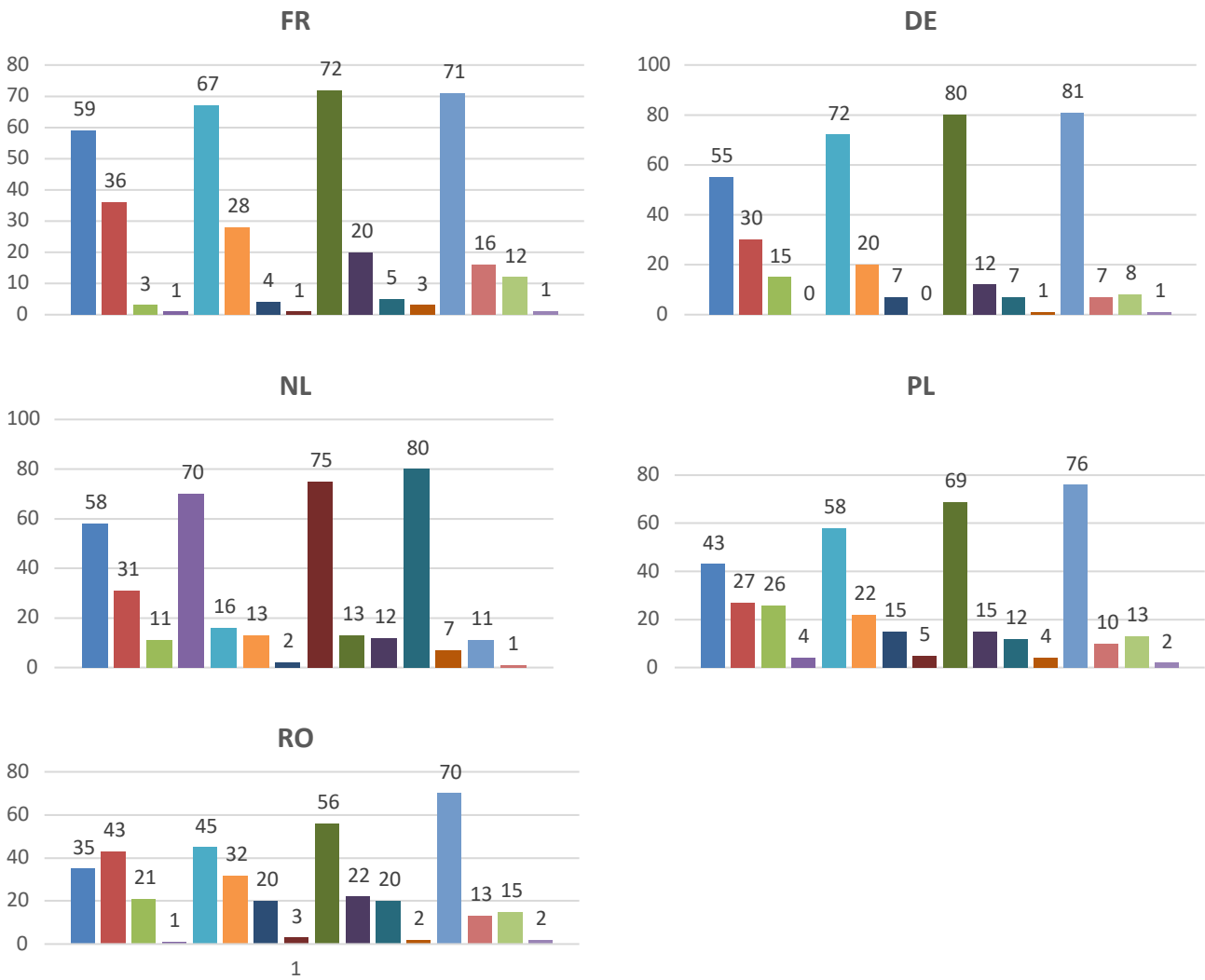
Figure 3.8. Distribution of firms by confidence when talking with VCs about financing
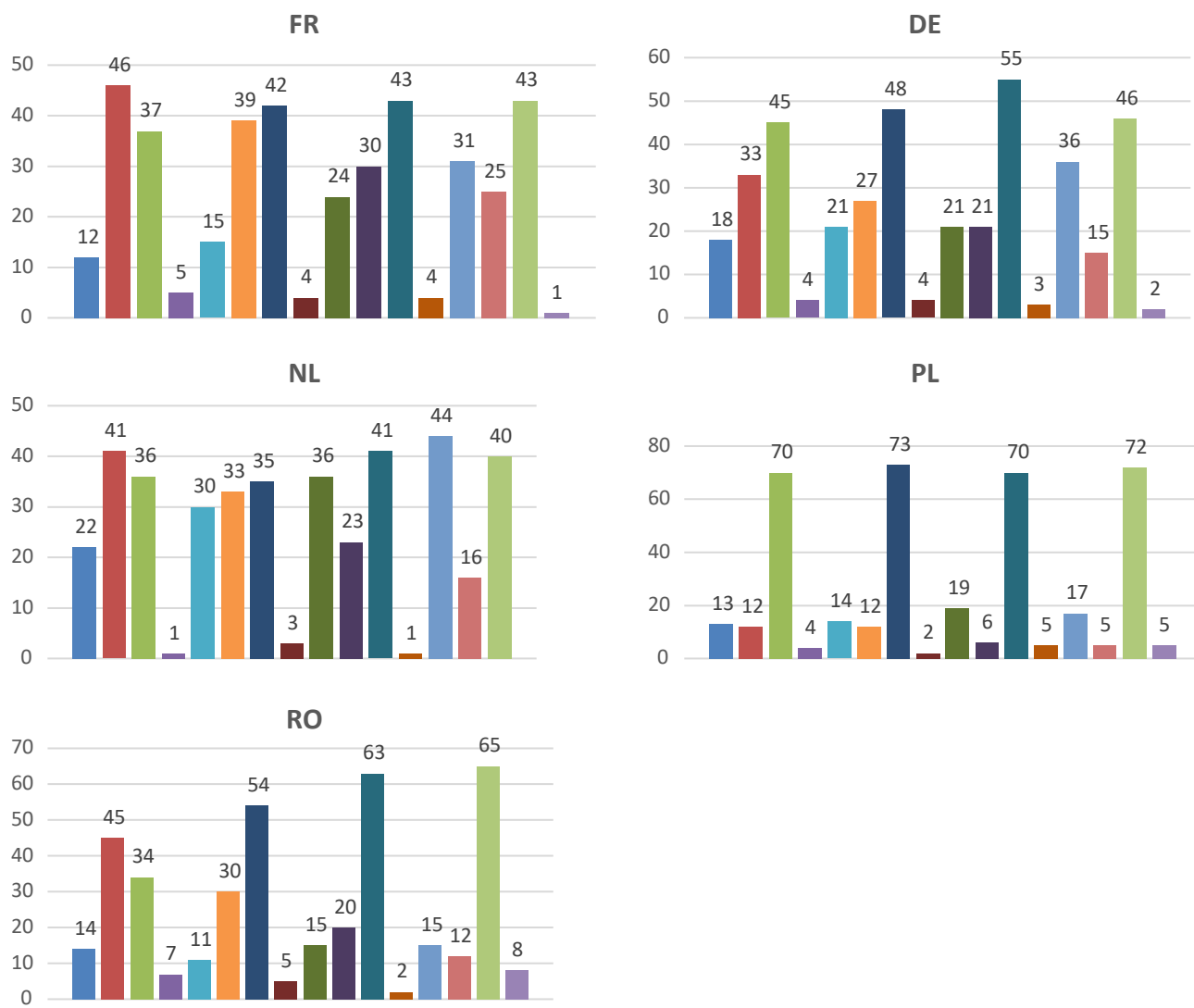
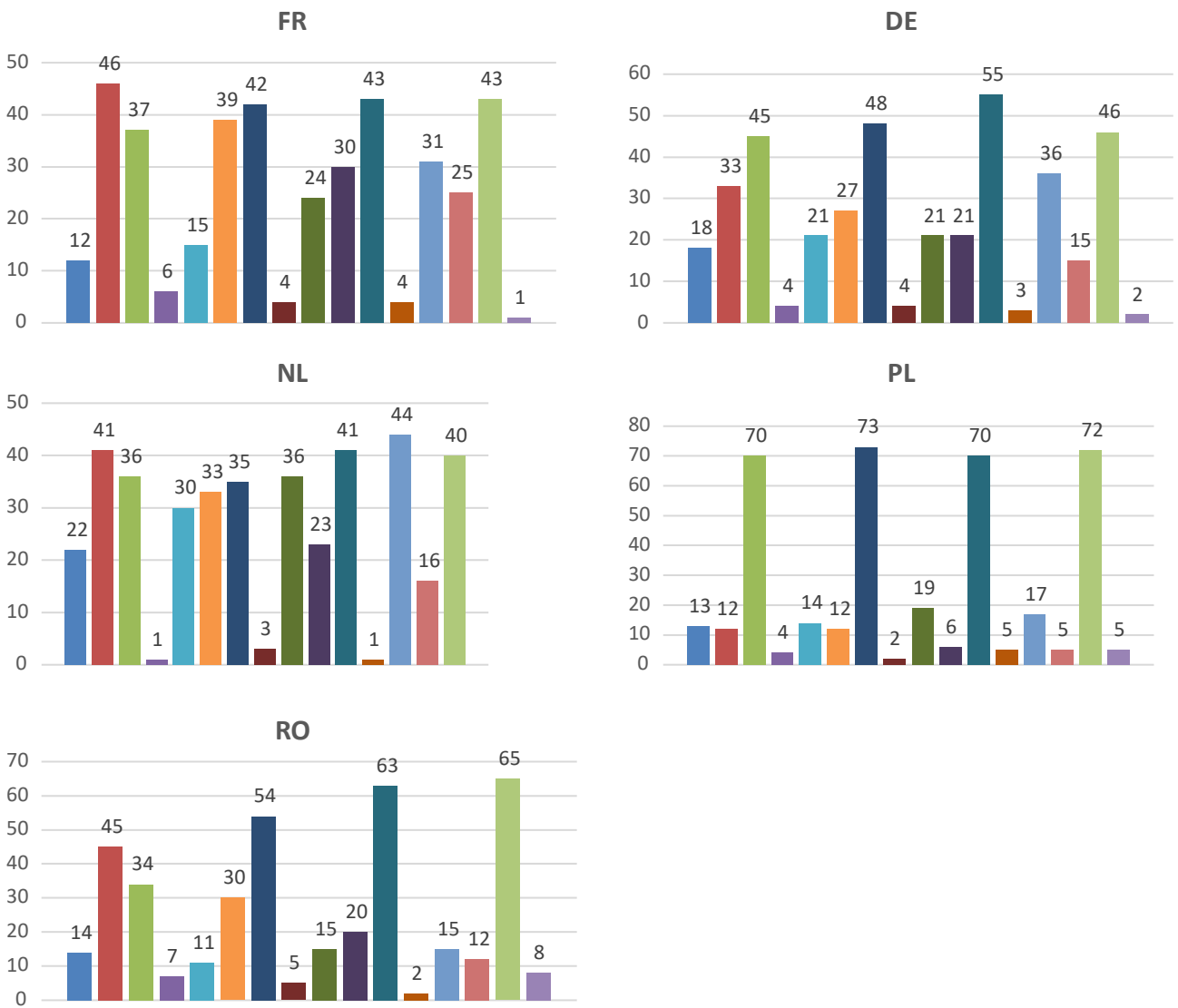**Figure 3.9.** Distribution of firms by expectation of growth in the next 2-3 years

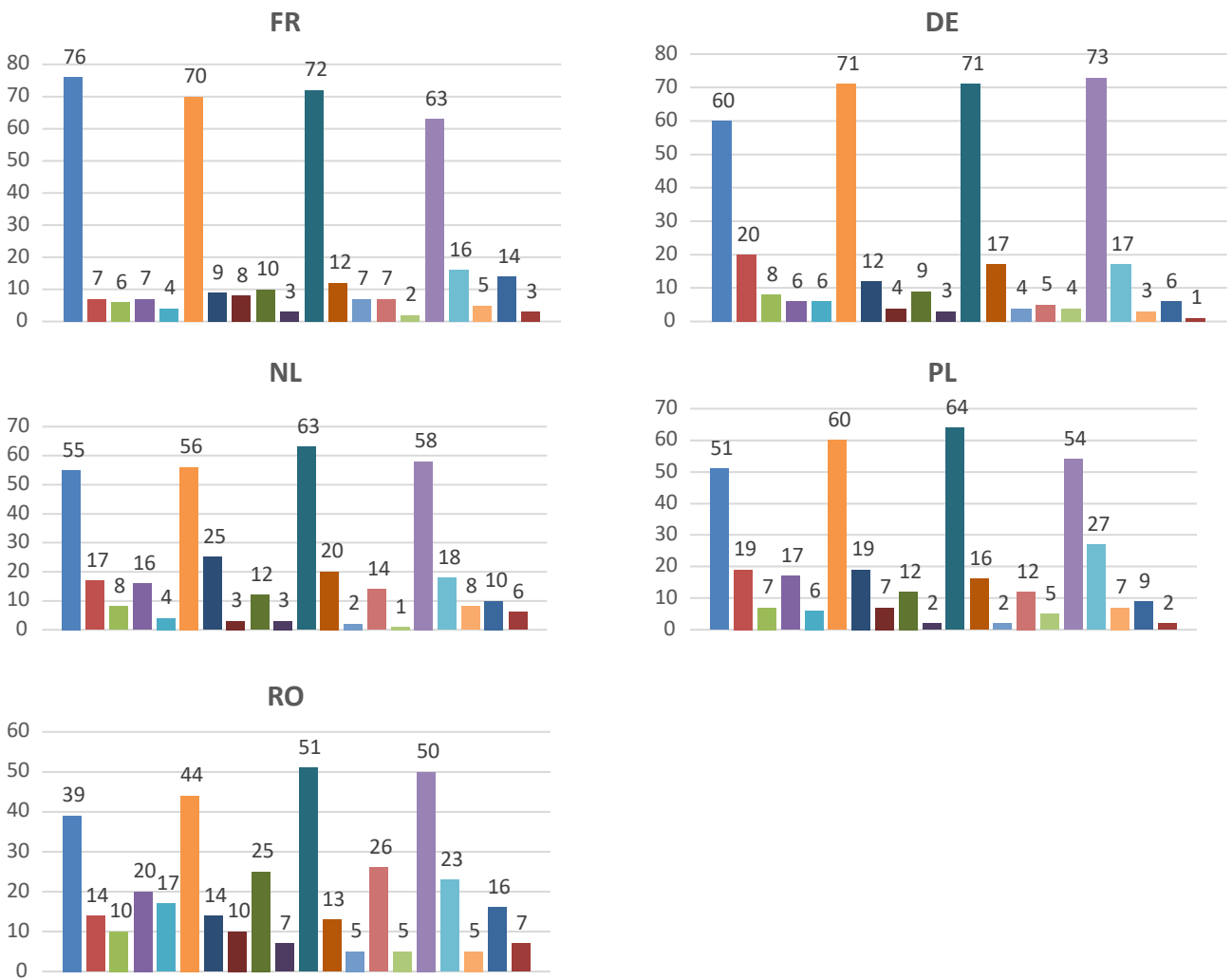**Figure 3.10.** Distribution of firms by the preferred external growth financing

Figure 3.11. Distribution of firms by the amount of external financing needed to finance growth **Figure 3.12.** Distribution of firms by opinion on limiting factors when demanding loans as external type of growth financing

FR

DE

NL

PL

RO
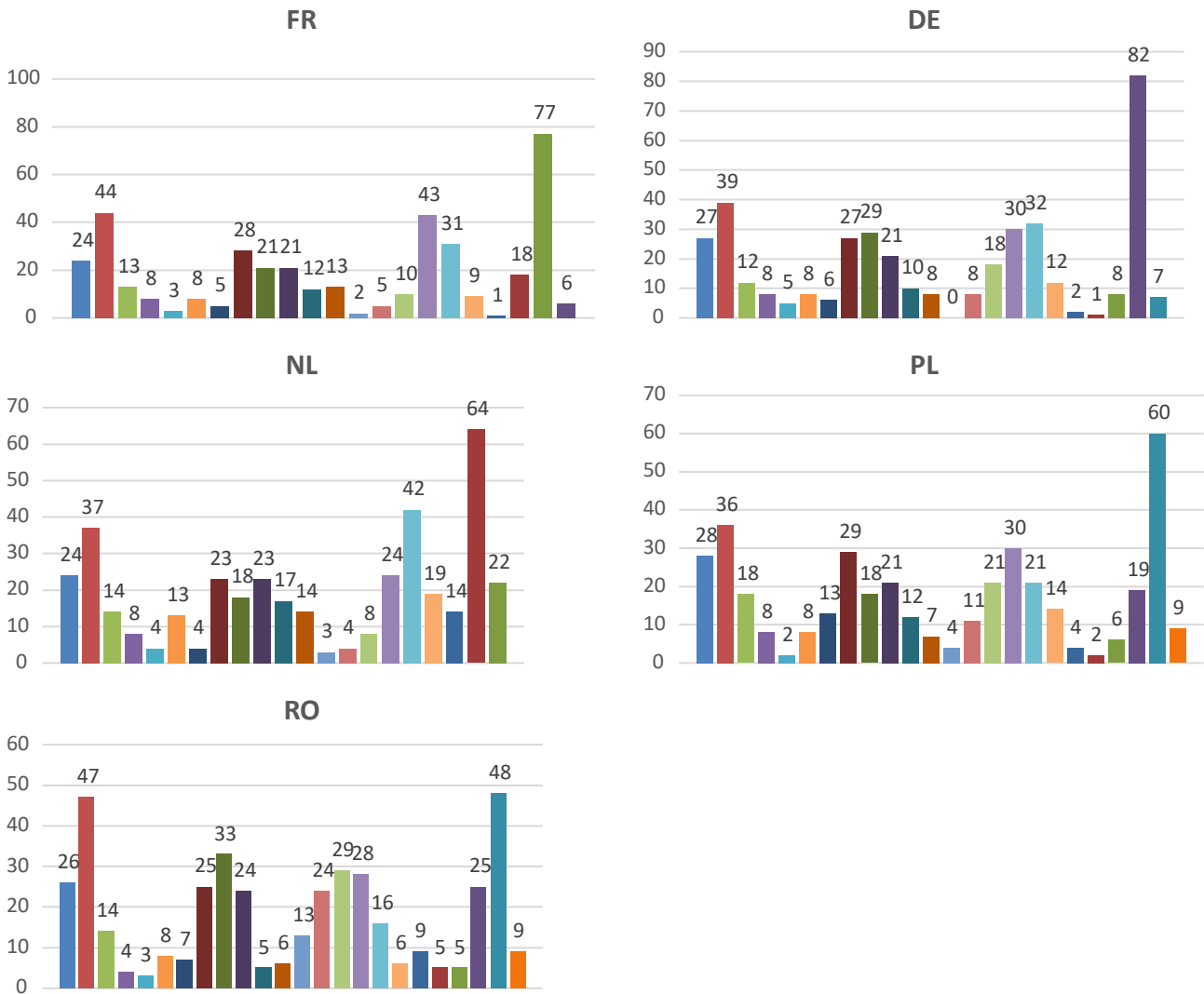
Figure 3.13. Distribution of firms by opinion on limiting factors when demanding equity as external type of growth financing
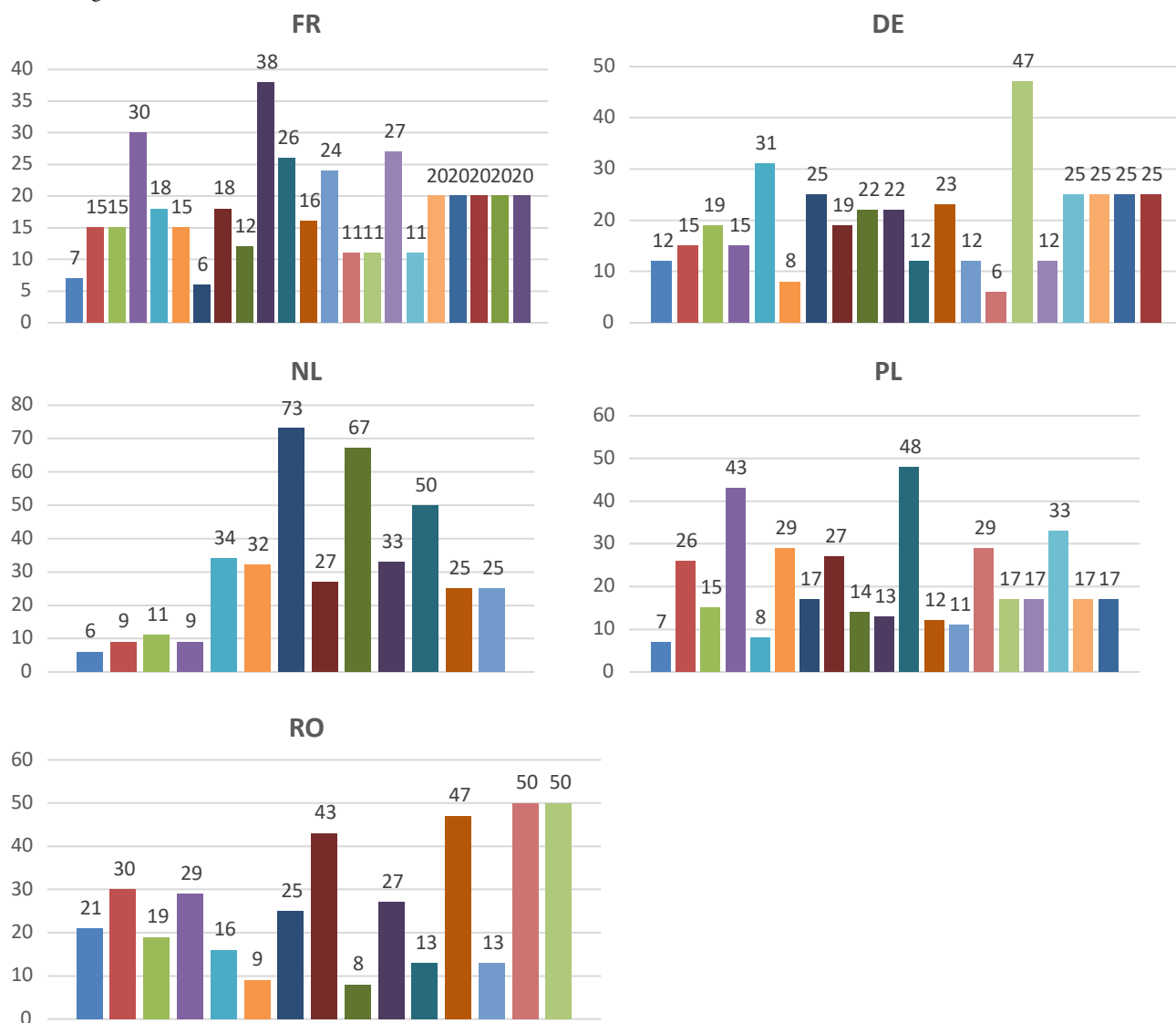
Finally, Figure 3.13 shows the distribution of firms by limiting factor when demanding equity. One result that applies to all countries and all firm sizes is the opinion that there is actually no equity financing available for SMEs.

Conclusions

In this paper, we investigate the financing of SMEs in Europe. We use publicly available data on outstanding loans and issued equity, as well as data collected through surveys, to estimate the gap between demand and supply of financing in five European countries. We also estimate the SME loan and equity gap in the US and compare these estimates with those we obtain for our European Research Countries. In line with our predictions, the results indicate financing gaps in the Research Countries that are three to five times larger than those in the US. These numbers are substantial considering that our total estimated SME financing gap for the U.S. ranges from 2.30%% to 3.78% of GDP.

Very few academic studies estimate the demand and supply of financing among European countries and the US. Based on different data sources, our study provides a comprehensive overview of the currently available data on SME financing supply. An important feature of our study is that we apply three different methods to estimate the demand for loans. Prior research estimates the average loan demand by observing only the sample size of loans that are obtained (EIB, 2013). Specifically, we include different sizes of obtained versus desired loans. Finally, we estimate the loan demand of firms that applied for but were rejected for a loan.

By providing an estimate of the sizable credit gap faced by SMEs, our paper complements the existing literature that seeks to identify the impact of measures designed to induce banks to extend more credit to SMEs. Additionally, our estimation of the large equity faced by SMEs suggests that we also need to explore how to induce market participants to provide equity capital to SMEs. This is particular-

ly important in the context of our results showing a very low level of incentives for SMEs in our Research countries to obtain equity financing. There is a potentially devastating effect of a decrease in equity capital for young and innovative firms that play an important role in innovation and development. In order for SMEs to enhance their own growth, they need equity capital financing.

Capital markets in some parts of Europe, including most of the Research Countries in this study, continue to lag behind other developed countries, such as the United States. There is a concern that capital markets in these countries are not yet a real source of financing and have failed to sustain business growth. The reasons for this lack of development of financial markets are outside the scope of this paper. Several hypotheses could explain this situation. First, there is an important relationship between macroeconomic and political stability and the development of a country's financial markets. For Romania and Poland, the past experience of economic and political instability may help explain the extent of underperformance, given the level of macroeconomic fundamentals. While economic openness is a relevant and pervasive obstacle to capital market development, effective public policy must go beyond simply identifying ad hoc macroeconomic factors to capital market development. Second, the development of capital markets has been shown to depend on the level of investor protection and the efficiency of legal enforcement (La Porta et al., 1997, 1998, 2008 and 2014). Low levels of creditor and shareholder protection are supplemented by legal enforcement problems in some of the Research Countries. There is a clear need to improve courts and other conflict resolution mechanisms and legal procedures to improve the financial environment for banks and other financial intermediaries. Appendix 5 discusses the legal and institutional factors affecting the proper functioning of well-developed debt and equity markets. Third, there is a concern that even countries with strong capital markets face serious challenges to reducing the financial gap, as robust financial systems often develop a higher dependence on external financing.

Our study reinforces the evidence found by policy makers and researchers on the need to establish a Capital Markets Union in Europe (EC, 2015). However, given the worldwide evidence on the impact of investor protection on the development on capital markets (La Porta et al. 1997,1998, 2008 and 2014), this Union should be based on a race to the top, and not to the bottom, of protection levels, particularly after the departure of the U.K. from the European Union. Overall, our findings contribute to the debate on improving access to finance for SMEs by providing knowledge about alternative forms of funding and enhancing access to long-term financing, such as venture capital and equity markets.

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