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Equity Gap? – Which Equity Gap? On the Financing Structure of Germany's Mittelstand

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Abstract

This paper examines the financing structure of small and medium-sized enterprises (SMEs) in Germany and questions whether an equity gap – or, more generally, a financing gap - exists. Reviewing the literature and available data sources, we find that financing constraints seem to affect, if at all, only a very small subgroup among highly growth-oriented firms. We do not detect any structural problems in average SME's capital structure. Rather, German Mittelstand firms appear to be non-growth oriented and content with their financing decisions. While the relationship-based German banking system helps to minimize the risk of credit rationing, trade credit offers an additional, stable form of liquidity "insurance". Highly innovative firms with strong growth potential, on the other hand, do seize the opportunity to tap unconventional means of financing (e.g. mezzanine capital) and appear very successful in doing so.

Key words: Equity Gap, Capital Structure, Financing Gap, Financing Structure, SME,

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Content

1 Introduction

For the last 30 years, any description of the "Mittelstand's" financing situation has been accom-panied by the diagnosis of a financing gap, most notably an equity gap. In a European context, an equity gap was first identified by the MacMillan Report in the UK in 1931 and has since been reiterated in many instances (Bolton Committee Report, 1971; Stanworth and Gray, 1991). Discussions surrounding the implementation of the new Basel accord (Basel II) have clearly spurred the debate and even today, quite some time after the European banks adopted the new regulatory approach, the question of whether or not particularly German small and medium-sized enterprises (SMEs) suffer from an equity gap seems not resolved.

Too little equity is of concern for at least three reasons: First, firms with too high leverage might go bankrupt more easily than others. Second, firms with too little equity might engage less in innovative activities that are inherently more risky in order not to put the firm's survival at risk. Third, firms with too little equity might be restricted in taking up new loans, so that the missing equity triggers a more general financing gap. This in turn could slow down firms' growth und thus impose a cost not only on the firms but also on the economy as a whole. It is not surprising then that financing structures of firms are an important area of research.

Furthermore, the hypothesized capital constraints of small and medium-sized companies have led to the establishment of a considerable industry channeling public monies to the seemingly needy companies. In a large number of countries special financial institutions have been installed that grant subsidized loans to SMEs or offer other forms of cheap capital. Assessing the foundation of these economic policy programs is therefore important also from a political viewpoint. The current paper tries to shed some light on the scale of the alleged equity gap for German SMEs. By bringing together both conventional wisdom and scientific expertise we attempt to evaluate the depth of the problem from a preferably broad perspective.

Approaches to answering the question on a potential equity (or, more generally, financing) gap for German SMEs run into severe conceptual problems. From a theoretical viewpoint, the main challenge is to find an appropriate benchmark of a "sufficient" equity ratio. From an empirical perspective, we have to admit that sound data bases on Germany's Mittelstand are extremely rare. This explains why most discussions on the topic have only touched the surface of a more detailed explanation and constitutes the main motivation for our study. In the following, we will try to put the different theoretical and empirical findings – also from international studies - into perspective, review the applied methods and point out their strengths and weaknesses. By doing so, we hope to offer a more complete assessment of the current financing situation of German SMEs.

Concluding from our analysis, we find that a true equity gap is only very small, if it exists at all. Evidence seems overwhelming that the still relatively modest equity ratio of SMEs in general, and particularly of German SMEs, is a consequence of rather than a cause for their financing choices. Smaller companies appear relatively content with their size and seem not very concerned with obtaining the necessary capital for growth. Even though German SMEs did strongly raise their equity ratios over the past 10 years, only a small fraction decided to conduct growth-related investment projects. This behavior is even more indicative as this time

period was largely characterized by extraordinarily low interest rates, so that growth projects should have been very attractive.

Small and medium-sized companies succeeded in raising their equity ratios in various ways, most notably by turning hidden reserves into equity, re-injecting owners' private equity into the company and also by deinvestment (Engel et al., 2006). Even though a large difference in balance sheet ratios still shows up between non-incorporated SMEs and large firms, the overall equity ratio seems to have reached a sustainable level. As a consequence, credit constraints cannot be diagnosed either. While there might have been an excess credit demand in the early 2000s, we cannot find a clear sign of true constraints that would lead to credit denials even for firms willing to comply with the requested credit conditions.

Our results hence lead us to conclude that the capital structure of German SMEs seems flexible enough not to put the firms' existence at risk – the major concern originating from an equity gap. Yet, we cannot rule out that a shortage of equity capital restrains the financing of innovations. Interestingly enough, though, the proportion of SMEs that are affected appears to be very small. At the same time, these "growing" firms also use innovative means of financing: they seem to be the ones who rely most on mezzanine capital and other, more unconventional financing sources. As a consequence, the usage of these alternative means of financing – i.e. alternative to the traditional bank loan – appears to be restricted to a relatively small subgroup of (strongly growing) SMEs. This may explain why the increasing supply of these capital types by banks in recent years did not meet sufficient demand from the total group of small and medium-sized firms in Germany.

The remainder of the paper proceeds as follows. The next section gives an overview on the conceptual problems of measuring financing gaps. Section 3 presents the relevant capital structure theories for our research question. Section 4 discusses balance sheet data of German SMEs. The following section presents empirical results on observed capital structures of small and medium-sized companies. Section 6 concentrates on empirical evaluations of private equity, while section 7 focuses on both theory and empirical assessment of the extent of credit rationing. A short overview of the relevant features of the German banking system is given in section 8. Section 9 discusses further means to detect financing constraints and section 10 concludes.

2 Conceptualizing Equity and Financing Gaps

Measuring an equity or, more generally, financing gap is difficult from a conceptual point of view. The expression of a "gap" – most commonly used in Germany – implies that there is a kind of chasm that needs to be filled by the missing equity or general firm financing. By looking at balance sheets, however, one can of course not detect such a gap directly, since, by definition, balance sheets always add up. Yet, many studies have tried to measure equity gaps for small firms in Germany and in other countries. One method to diagnose an equity gap would be to use a theoretically optimal capital structure as a benchmark and deviations from this benchmark as a measure of a "gap". Unfortunately, there is no consensus on an optimal structure in the literature. We briefly review capital structure theories and discuss their applicability to the current question of interest in section three.

Another frequently pursued method to analyze a potential equity gap for Mittelstand firms is to compare the financing mix of smaller firms with that of larger firms. A lower equity ratio in small firms' balance sheets could be indicative of a gap. Indeed, many studies find this relation with respect to the German case. Other surveys compare German SMEs' financing structures with that of other countries to find out whether there is a special German equity gap. These studies suffer from data problems – especially concerning different accounting and tax regulation – as well as selection biases. We present those findings in section four.

Putting the conceptual problems aside, interpreting the empirical evidence portrayed in these studies is not without ambiguity either: The very fact that one can observe a higher leverage in small and medium sized firms does not necessarily constitute an equity gap. Creditors that do lend money to these companies obviously find that the deployed equity is sufficient. Little equity, therefore, could just be the result of a leveraging strategy that maximizes the return on equity for the firm's owners. Interestingly, many surveys find that most firms do not mention financing difficulties as their main business concern. Even though this evidence is based on survey data and is thus clearly dependent on the geographical area, industry mix and time, most firms seem to be "happy" (Vos et al. 2007) with their financing situation. We review findings on the self-perceived financing situation of firms in section five.

Digging deeper into firms' financing needs, a potential equity gap could simply manifest itself in firms' demand for external equity capital. This narrower interpretation of an equity gap is particularly often used in the UK. According to the UK Treasury (HM Treasury 2003), external equity is especially hard to find for medium-sized investments, while large firms are provided with private equity and "business angel" investors grant capital to small firms. Yet, empirical evidence on this aspect rests strongly on the assumption that firms are seeking and asking for external equity to grow. This paradigm is, however, questionable. Surveys show that most small and medium-sized firms do neither seek strong growth nor external equity financing. At the same time, firms that would like to grow further but do not apply for external finance and also firms that do not obtain external equity due to, e.g., a weak business outlook do not contribute to the definition of being equity or finance constrained. A conceptually meaningful "gap" should encompass only firms with appropriate management quality and business outlook that do want to grow but do not receive external equity because of some kind of market failure. In section six we review the evidence on the rather miniscule share of external equity financing. It should be kept in mind, though, that as an alternative to external equity, firms will certainly have a tendency to satisfy any capital needs by drawing on internal equity capital first. In this respect, an equity gap could also show up as persistent, structural difficulties in generating internal profits and rejecting them into the company.

A lack of equity could, finally, also trigger constraints in firms' ability to take on loans – thus, the equity gap could turn into a "credit" or general "financing" gap. Yet, evaluation of survey data on firms' financing conditions has to be very careful in order to differentiate between a simple "credit crunch" and true "credit constraints". While the former relates to a situation where the supply of credit is lower than the demand, the latter refers to the same sort of market failure as in the case of equity financing. Thus, firms that do not apply for loans because of former discouragement should not be seen as contributing to a financing gap. Similarly, companies that do report rejections of loan applications might simply not be creditworthy. Firms might also complain about high financing costs – having been able to obtain a loan at a

higher interest rate. The strict concept of a "finance gap" or "credit rationing" pertains solely to creditworthy companies that apply for loans but are not able to obtain any and is, hence, due to a market failure. Empirical evidence from surveys that is able to single out financing gaps in this strict sense is extremely scarce. We review the studies in section seven, along with recent alternative approaches to measuring financing constraints in section nine. These concentrate on the use of trade credit as an expensive way of financing as well as the elasticity of investments to cash flows as indicators for financing constraints. Due to the focus on observed behavior rather than on static balance sheet data these approaches suffer less from conceptual problems. Since small firms' investments depend more on former cash flows, these methods may be able to indicate financial constraints more precisely.

3 Capital structure theories

Firms' capital structures have been studied since the late 1950s. Starting with the seminal paper by Modigliani and Miller (1958), various extensions of the original model have provided distinct arguments underlying "optimal" capital structures. According to Modigliani and Miller (1958), financing decisions do not matter in perfect and frictionless capital markets, i.e., they cannot change the market value of the company. As a consequence, the (weighted average) cost of capital is independent of the company's leverage. Since debt has a prior claim on a firm's assets and is, thus, cheaper than equity, a company may have an incentive to replace extensive equity with cheap debt. However, Modigliani and Miller show that in a perfect capital market any reduction in equity capital will automatically increase the cost of the remaining equity, as such exactly offsetting the seemingly beneficial substitution effect on costs. Support for this argument comes from the supply side, which on perfect markets is – by definition – infinitely deep. Yet, in the real world, financing decisions do seem to matter for firms. Two different lines of arguments may help to explain this observation: either firms are not value-maximizing entities. Indeed, for SMEs this hypothesis is at least debatable. Alternatively, deviations from the assumption of perfect and frictionless capital markets may serve as explanations. As chief reasons in this respect, taxes, differences in information and agency costs have been identified.

Capital structure theories building on the original argument by Modigliani and Miller deviate in the emphasis they give to these three aspects. Generally, these theories have been devised with large, public, nonfinancial corporations in mind that have easy access to domestic and international capital markets. These companies can choose between a large menu of financing instruments and face only low transaction costs. Still, several of the arguments contained in these theories seem to be relevant for smaller, non-public firms, too. We will therefore present the theories in turn.

The **tradeoff theory** focuses on the tax effects of different financing structures. It defines the optimal capital structure as the leverage that balances the tax advantage of additional debt (the so-called tax shield) against financial distress costs. It justifies moderate debt ratios by tax-paying firms. The optimal debt ratio is clearly firm-dependent and also contingent on the business cycle as both will influence the amount of taxes to be paid and hence the tax-deductability of interest payments. Still, the present value of interest tax shields could rea-

sonably be very large, leading to high "optimal" debt levels for corporations (Modigliani and Miller, 1963).

The **pecking order theory** of Myers and Majluf (1984) and Myers (1984) emphasizes information asymmetries between firm insiders (managers and incumbent shareholders) and outside investors. Since equity forms a residual claim on a firm's assets and earnings, information asymmetries have the strongest effect for equity issuances. Due to adverse selection processes, uninformed investors must fear that managers and current firm owners (i.e. equity holders) will wish to issue overvalued shares. As a consequence, they are only willing to invest if the share price is sufficiently low. This, in turn, makes equity issuances costly for the firm and increases the relative attractiveness of debt capital. This reasoning leads to the following preference or pecking order of capital structure: i) firms prefer internal over external capital; ii) if external funds are required for capital investment, companies will generally issue the safest securities first, i.e., move from safe to riskier debt to convertible securities or preferred stock, and use (outside) equity financing only as a last resort. The pecking order theory hence illustrates why firms usually rely heavily on debt financing and also why leverage tends to increase with profitability. In contrast to the tradeoff theory, however, it does not allow the derivation of an optimal leverage ratio. Rather, the observed capital structure depends on firm characteristics that influence information asymmetries and on a company's investment opportunities that may justify large capital needs.

Finally, the so-called **free cash flow theory** focuses on misaligned incentives between firm managers and shareholders and is, thus, in contrast to the pecking order theory that implicitly assumes that managers always act in the best interest of the firm's equity holders. Jensen and Meckling (1976) argue that managers follow their own economic self-interest instead, which is not necessarily aligned with shareholders' benefits. In this context, high debt levels may serve as disciplining instruments because they force managers to pay out cash instead of wasting it on negative net present value projects or "organizational inefficiencies" (Jensen, 1986). The leveraged buyouts of the 1980s seem classic examples of such disciplining capital structure moves. For SMEs, however, this argument seems hardly applicable.

Direct application of the mentioned capital structure theories on SMEs is hardly possible, simply because the theories were not designed to explain financing decisions of small, young firms. Collecting and discussing key facts with respect to SME financing, however, in combination with the theoretical concepts outlined above may be a reasonable starting point to understand and interpret observed capital structures. Two aspects are particularly obvious: small and medium-sized companies are much more affected by problems of information asymmetries than large firms, and their access to public bond and equity markets is strongly limited due to disproportionate transaction costs. Both aspects will be discussed in the following sections.

4 The capital structure of German SMEs

Information on the capital structure of German SMEs is provided from various sources, e.g., from Deutsche Bundesbank, Kreditanstalt für Wiederaufbau (KfW) or Deutscher Sparkassen und Giroverband (DSGV). The disclosed numbers vary considerably, however, depending

mainly on the underlying sample of firms. Also, capital ratios are sometimes announced for individual size brackets of firms (usually differentiating between "very small", "small" and "medium-sized"), but sometimes only as an average over all SMEs. In the following, we will present the data announced by Deutsche Bundesbank that refer to firms with yearly turnover below 50 Mio. EUR and differentiate between incorporated firms (Kapitalgesellschaften) and non-incorporated firms (Personengesellschaften and Einzelunternehmen).

As can be seen from Table 1, the equity ratio of non-incorporated firms increases from 2.1% in 1994 steadily to 8.8% in 2004 – from its minimum in 1996, it rises by more than 700%. For incorporated firms it raises from 13.6% to 23.4%. At the same time, the ratio of liabilities decreases: with respect to short-term liabilities it decreases from 59.6% to 52.7% for non-incorporated firms and from 56.3% to 48.9% for incorporated companies. The long-term liabilities ratio falls from 33.3% to 29% for non-incorporated firms and from 18.8% to 13.8% for corporates. Among short-term liabilities, trade debt is roughly as important as bank loans, for incorporated firms even more so than for non-incorporated companies, where trade debt started to fall slightly behind at the end of the 1990s. With respect to long-term liabilities, in contrast, bank loans make up about 75% for non-incorporated firms, but only 64% for corporates. Interestingly, comparing trade debt to trade credit on the asset side of the companies' balance sheets, we find that SMEs seem to be net-providers of trade credit. Particularly for incorporated firms the provision of trade credit exceeds the reception of trade debt by 30-40% (Deutsche Bundesbank, 2003, 2006; Wagenvoort 2003).

Financing Structures of German SMEs, 1994-2004

	1994	1996	1997	1998	1999	2000	2001	2002	2003	2004
Equity Ratio										
SMEs, all legal forms	7.0	6.2	6.0	7.2	8.1	9.2	9.9	11.3	12.9	15.1
SMEs, non-incorporated firms	2.1	0.8	1.0	2.3	2.9	3.9	4.5	5.4	6.9	8.8
SMEs, incorporated firms	13.6	13.6	13.3	14.4	15.5	16.5	17.2	19.4	21.0	23.4
large companies, all legal forms	24.3	25.0	24.9	25.8	26.3	25.4	26.1	27.3	26.9	27.5
Short-term liability ratio										
SMEs, all legal forms	58.1	57.8	56.3	54.5	54.0	53.6	53.7	53.8	52.6	51.0
SMEs, non-incorporated firms	59.6	59.4	56.5	54.3	54.1	53.6	54.2	55.1	54.0	52.7
SMEs, incorporated firms	56.3	55.5	56.0	54.7	53.9	53.5	53.1	52.0	50.7	48.9
large companies, all legal forms	35.8	35.7	39.5	39.1	38.7	41.1	40.8	39.6	39.7	39.3
Long-term liability ratio										
SMEs, all legal forms	25.5	27.4	28.1	28.6	28.1	27.1	26.0	24.0	23.2	22.4
SMEs, non-incorporated firms	32.3	33.2	35.0	35.7	35.1	34.1	32.7	30.7	29.9	29.0
SMEs, incorporated firms	18.8	19.5	18.1	18.3	18.0	17.3	16.8	15.0	14.3	13.8
large companies, all legal forms	9.7	9.3	8.2	8.6	8.9	8.1	8.2	8.4	9.0	8.5

Table 1: Financing Structures of German SMEs, 1994-2004
Source: Deutsche Bundesbank Homepage

The recent increase in SMEs' equity ratio is staggering: On average, it increases from a roughly stable level of 6-7% in the years before 1998 to 15.1% in 2004, i.e. it more than doubles in six years, which – on top – include a severe business downturn after the burst of the "dot-com bubble" in the years 2001-2003. Recent publications show that this trend continues – albeit at a slower pace – until 2006, the last year for which data are available (KfW 2008a). Two main factors serve as explanations: the rising equity ratio could be the consequence of a general deleveraging effect – i.e. banks reducing their loan exposure to SMEs to a large extent – or it could be due to a deliberate effort from the SMEs' side to increase their equity, or both. Anecdotal evidence points toward the introduction of Basel II as playing a prominent role in this transition process. The new Basel accord favours centralized credit decisions, made on verifiable, "hard" data over those based on soft, relationship-oriented information about a potential borrower. SMEs with little equity displayed on their balance sheets could envisage upcoming problems in obtaining loans even from local bankers that have been willing to grant loans in the past. As a consequence, the new regulatory scheme induced firms, among other measures, to turn hidden reserves into equity, and to re-inject equity that had previously been booked on their owners' private accounts. Obviously, these measures would have been almost impossible to undertake for firms suffering from a structural equity gap. As such, our first assessment of the historical development of SMEs' balance sheet ratios is relatively positive.

These findings are backed by a recent large-scale survey (KfW 2008b). German firms have been asked for the reasons of not pursuing planned investment projects. Only 17% report any difficulties or delays in the investment process at all. 10% said that bad economic situations have been the major reason for abandoning investment projects, 6% report financing problems and another 2% problematic economic situations in connection with financing problems. In sum, only 8% of all firms report problems in financing investment projects – this does not back the notion of an equity or financing gap in SMEs in Germany. Smaller firms, however, report considerably more problems in going forward with investment projects than larger firms (KfW 2008b). Unfortunately, data from this survey does not allow for controlling for firm financial data, which would be needed to assess a potential "gap" – firms might be inclined to overstate "financing problems" and to understate bad business outlook or insufficient management quality.

Comparing the capital structure of German SMEs to large companies (yearly turnover in excess of 50 Mio. EUR), we find that the large firms' equity ratio also increased from 24.3% (26.6% for incorporated firms, 14.6% for non-incorporated ones) in 1994 to 27.5% (28.7% for corporates, 23.7% for non-incorporated firms) in 2004. While the average increase is of a much smaller magnitude than the one observed for SMEs (10% vs. 150%, averaging over both incorporated and non-incorporated firms in each size class), it is interesting to note that differences between small and medium-sized corporates on the one hand and large corporates on the other hand are not too strong. Rather, their equity ratios have developed into being relatively similar nowadays, while for non-incorporated firms there is still a large difference. At the same time, liabilities make up a much smaller fraction of large firms' balance sheets, with short-term liabilities ranging from 35.8% (1994) to 39.3% (2004) and long-term liabilities between 9.7% (1994) and 8.5% (2004). While the liability ratios vary considerably according to legal form (incorporated vs. non-incorporated), we do not find similar ratios for small and medium-sized corporates and large corporates, as was the case for the equity ratio. Also in contrast to SMEs, bank loans make up only a relatively small proportion of approxi-

mately 12% of short-term liabilities, while trade debt makes up about 22%. Yet, comparing trade debt and trade credit, we find that large firms are net-providers of trade credit, too. The effect is also stronger for incorporated than for non-incorporated firms and only of a slightly smaller magnitude than for SMEs (Deutsche Bundesbank 2003, 2006).

Comparison of capital structures over different European countries shows that German SMEs rely to a much larger extent on bank debt than small and medium-sized companies in other countries. This effect is also portrayed in the following figure, taken from Wagenvoort (2003).

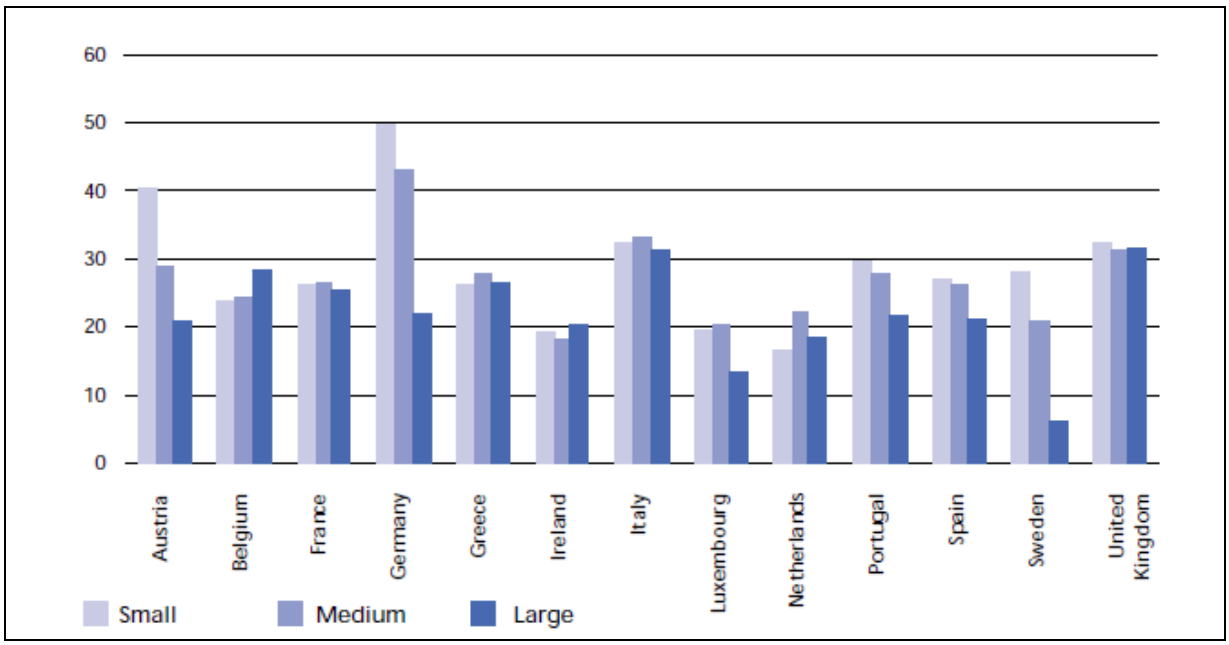

Figure 1: Financial debt of enterprises in EU countries (in percent of total liabilities)
Source: Wagenvoort (2003)

Many researchers have stressed the fact that international comparisons between financing structures have to take into account different legal systems as well as institutional and regulatory settings (Beck et al., 2008; Heimer et al. 2008; Schündeln, 2007). Nevertheless, studies of capital structures for European SMEs underline the German pecularities. Italian SMEs, for instance, tend to be even smaller than German Mittelstand firms (Guiso, 2003) and have a much higher equity ratio and rely to a much lesser extent on bank debt. For a sample of manufacturing SMEs in 1999, Guiso (2003) finds the equity ratio to be 21%. Interestingly, almost one third of all Italian manufacturing SMEs do not hold any bank debt. With respect to maturity, only 28% of total financial debt is long term. On the other hand, among those firms that hold bank debt, both capital structure and debt maturity are very similar for SMEs and large

Italian firms. At the same time, profitability does not vary that strongly, neither across size classes nor along the use of financial debt.

Comparing German Mittelstand firms to French SMEs we see again a much higher equity ratio in France at roughly 25% on average (Dietsch, 2003). What may come as a surprise is that the average equity ratio hardly changes with firm size. However, there is a strong variation in leverage within each size class. Also, trade credit is a much stronger source of finance for French SMEs: it is the second largest financing source after equity and particularly medium-sized firms seem to rely very heavily on this debt instrument. Comparable to Germany, however, the importance of bank debt decreases in firm size, as about 80% of financial debt of SMEs is bank debt, but only 59% for very large firms (with annual turnover larger than EUR 100 million).

Comparing SMEs in Belgium, Germany, Spain, Ireland, Italy, the Netherlands, Portugal and the UK, a study by Hall, Hutchinson and Michaelas (2004) finds that while Italian firms have the highest short-term debt ratio, German SMEs have by far the highest long-term debt ratio. The study is based on financial firm data from the year 1995, with SMEs being defined as firms with less than 200 employees. Surprisingly, German firms in this sample turn out to be the biggest (in average size) and oldest, while Irish SMEs were the most profitable and UK SMEs the most rapidly growing.

One of the major reasons for the small share of equity financing in the German Mittelstand are accounting standards that favour the building of hidden reserves instead of equity in German firms' balance sheets. In a relatively old study dating from the year 1985, several German academics questioned the particular development of the equity ratio in German firms as compared to US and UK companies (Perlitz et al., 1985). Even though they did not focus on small and medium-sized firms, but quite on the contrary on the 100 largest companies in the three countries, they find that a large part of the seeming disparity in capital ratios is simply due to accounting differences. Taking these differences into account, the authors try to calculate "corrected" equity ratios and find that balance sheet ratios in Germany and the UK become very similar, while the difference between German and US ratios at least halves. The authors attribute the publicly reported differences in equity ratios mainly to the extreme prudence governing the German accounting system that affects particularly the way in which accruals for pensions are accounted for (Perlitz et al., 1985). The very low equity ratio for small firms is at least partially explained by the possibility of asset-shifting from firm to private accounts, mirrored by the possibility of shifting liabilities from private to firm accounts; both of which is favorable for tax reasons (Plattner et al., 2005). In these cases, German accounting standards produce lower equity ratios than others. Up until 2000, however, there has been also a tax disadvantage for retaining earnings, thus lowering the incentive to increase equity within firms (KfW 2006). Other arguments focus on the supply side of bank loans: German insolvency laws strongly favors lenders, making loans to firms less risky than in other countries. Also, the German "Hausbank"-system and strong competition in the banking sector increase access to finance for German firms (see section 8 below).

5 A "happy" story? - Empirical results on capital structure

While empirical studies on capital structure theories come to contradictory results for large firms (Shyam-Sunder and Myers, 1999; Frank and Goyal, 2006), there seems to be less ambiguity for SMEs. Several studies conclude that small and medium-sized firms' financing decisions are better explained by the pecking-order theory than by the tradeoff theory. In this respect, Cole (2008a) examines data from four U.S. Surveys of Small Business Finances in 1987, 1993, 1998 and 2003. He finds that leverage, i.e. firms' use of debt to finance assets, is negatively related to firm size, age, profitability, liquidity and credit quality. Leverage is positively related to the number of banks and other financial institutions with which a firm has relationships. Taken together, these results are broadly supportive of the pecking-order theory. They are inconsistent with the tradeoff theory, which would have predicted a positive effect of size, credit quality and profitability on leverage: profitability should go hand in hand with a higher tax rate, which raises the benefits from interest rate tax deductability, while size and credit quality typically signal lower financial distress risk. A Spanish panel data set from 1994-1998 delivers similar results (Sogorb-Mira, 2003) and points out that taxes even seem negatively related to the level of debt.

Many authors argue, however, that the seeming "fit" of the pecking-order theory to SMEs' financing decisions may not necessarily be a sign of information asymmetries affecting the relation between manager-owners ("insiders") and external investors ("outsiders"), leading external finance to be more costly than internal means of financing. Rather, external financing goes along with a partial loss of control over the firm's business, which may be very dear to the firm's insiders (Jarvis, 2000). Therefore, the observed high debt levels in SMEs may simply reflect demand-side preferences and are not necessarily manifestations of supply-side deficiencies: "…any apparent gap is in part a consequence rather than a cause of the financing preferences of small firm owners." (Hamilton and Fox, 1998).

With respect to capital constraints hindering growth opportunities, Wagenvoort (2003) conducts a study on almost 200,000 SME firms in Europe (from manufacturing and construction industries) over the time period 1988 to 2001. He finds that – judging from the European average SME - equity ratios only modestly increase with size and that SMEs are overall large net providers of trade credit. While this may be taken as a sign that capital constraints do not seem to be binding, SMEs at the same time seem less flexible than large firms in adjusting the structure of their balance sheets. This may create problems if firms are keen to take on quickly changing growth opportunities. Yet, Wagenvoort does not analyze the depth of this problem, leaving open whether or not "sticky" capital structures may lead to large quantitative problems for firms' business development.

One recent strand of the literature openly questions the assumption of firm growth being the main business motive for SMEs, which also underlies the capital structure theories: "The finance gap hypothesis suggests that small and medium sized enterprises suffer from a shortage of finance and that informational asymmetry is the likely cause of this problem. Financial analysis of SMEs, therefore, traditionally begins with the presumption that growth is expected, but market failures or credit rationing restrict growth. Further, SMEs "over" or "under" invest and suffer from agency costs. It seems that SMEs are financially frustrated." (Vos et al., 2007). In contrast to this statement, Vos and his co-authors argue that SMEs are non-

growth oriented. They refer to small and medium-sized companies as a "sustainable" form of business. As proof, the authors report that 24.7% of the firms in the 2004 FSB survey in the UK state that they want to stay about the same size, while 49.1% want to expand moderately. 6.9% want to sell their business or hand it on (1.9%). Rapid growth is the main objective only for 8.3% of the firms in the sample. Similarly, in the 2003 survey of US SMEs, growth is rarely stated as a main objective. With respect to capital structure, internal means of financing again seem to be the most important, supporting the pecking-order theory. However, the authors show that the use of external financing sources depends much stronger on the manager-owner's "connectedness" in the firm and the business community (measured by age and years in business) than on firm characteristics. Interestingly, the use of multiple sources of financing is negatively related to years in business and age, suggesting that SMEs aim for sustainability instead of growth and show a remarkable degree of contentment. Hall et al.(2004) support this finding in a cross-country regression where firm growth does not seem to drive capital structure decisions.

Interestingly, Vos et al. (2007) also show that high-growth firms are more likely to apply for new loans and to use multiple sources of funds, as such not supporting the financing gap hypothesis. In this respect, they complement an earlier study by Storey (1994), who also reported that SMEs with high growth ambitions have better access to external finance than firms with below-average growth interests. The "happiness" story by Vos et al. (2007) is also supported by the numerous studies on credit scoring in small business credit, reiterating that banks measure loan performance using business owner characteristics rather than firm characteristics (Mester, 1997; Berger, Frame and Miller, 2002; Berger and Frame, 2005).

6 External equity financing

Private Equity and Venture Capital financing have strongly gained importance in recent years. For large firms, they are nowadays established means of satisfying capital needs. If SMEs are affected by an equity gap, one could reasonably believe that a strong demand for and use of such external equity funds should be observed. Yet, two problems arise that make this direct inference inherently difficult, one on the demand side and one on the supply side: First, external equity investors demand high returns that are usually achieved by high leverage and especially strong growth. As shown before, most SMEs do not intend to grow fast and thus neither qualify for private equity nor need it. Also, many owner-managers are reluctant to take external investors on board and share decision power (TEC 2007). Second, the UK Treasury (HM Treasury 2003) reports a particular "equity gap" for a specific size segment: For investments of a size between GBP 250.000 and GBP 1 million turnover, external equity is supposedly hard to get. Smaller firms can turn to "business angel" investors that provide capital, and private equity investors stand ready for firms with larger needs. Firms in-between – i.e., smaller SMEs – suffer from the Private Equity's industry structure that does not adequately supply capital to smaller firms since the total return is too small compared to the costs of investing and monitoring the firm.

However, even studies focusing on high-growth firms conclude that a potential equity gap - if it exists – can only be tiny. In contrast to earlier work that focused on supply-side reasons for an equity gap, the study by Gualandri and Venturelli (2008) analyzes a demand-side model of

equity needs. Relying on Italian SME data, they find that the equity gap in absolute monetary terms is almost insignificant. Equity needs turn out to be mainly driven by firm age and size, but not by the degree of innovativeness. Similarly, a study on the supply of Venture Capital for German start-up companies shows that regional proximity is relatively unimportant for VC investments. Hence, the absence of VC firms in some European regions should not be associated with an equity gap (Fritsch and Schilder, 2006).

In any case, Private Equity investments do not play a major role in firm financing in continental Europe. Figure 2 reports the Private Equity investments as percentage of GDP in 2007.

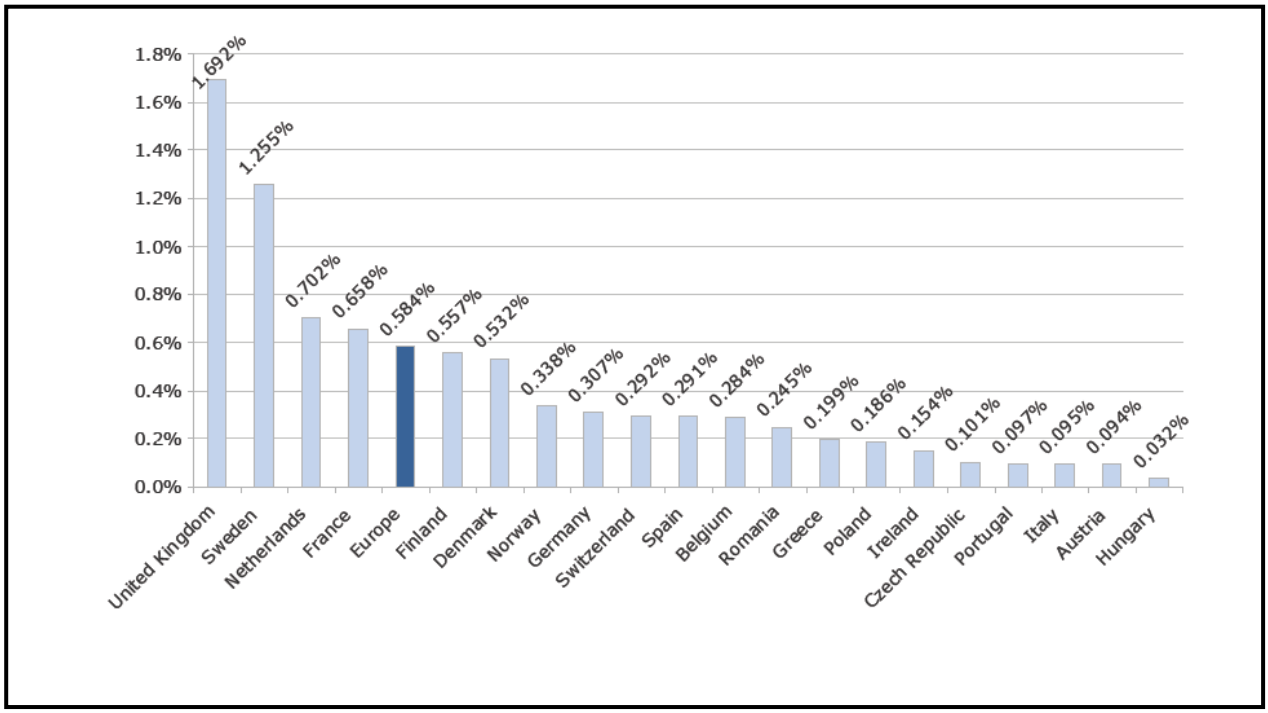

Figure 2: Private Equity investments per country as percentage of GDP in 2007
Source: EVCA (2008)

On average, European Private Equity (PE) investments amount to 0.58 percent of GDP. While the UK has the highest relative PE investment (1.69 percent of GDP), Germany shows only a ratio of 0.31 percent of GDP – roughly half the European average. In past years, PE investments have always been much lower in Germany than in many other European countries (Frommann and Dahmann, 2005).

In absolute terms, total PE investments in Germany amount to 10.6 billion Euros in 2007. At the same time, divestments in Germany amount to 4.96 billion Euros, leaving the net total investment at 5.64 billion Euros. EVCA does not provide the net figures for the different investment classes, so we stick to the gross investment for the breakdown in different size classes: 8.9 billion (84.4 percent of all PE investments) have been invested in buyouts, and another 0.54 billion (6.7 percent) is replacement capital. Seed and start-up investments account for 0.39 billion Euro (3.7 percent), while expansion capital – presumably needed most in case of an equity gap – is 0.71 billion Euro or 5.2 percent, that were invested in 485 com-

panies (EVCA 2008). Assuming the divestment rate for expansion capital being the same as for the private equity investments in general, we derive a net investment of expansion capital of 332 million Euros for 2007, or 0.014 percent of GDP. Neither the total sum of investments nor the relative terms paint a picture of companies in strong need of external capital.

7 Credit rationing

Given SMEs typical lack of a reliable track record vis-á-vis outside financiers, the supply of external capital to small and medium-sized firms crucially hinges on the possibility to mitigate information asymmetry. Due to the role of equity as a risk-absorber, a high equity ratio may be used as a signal for a high creditworthiness of the company. Regulatory measures, such as the new Basel accord, often directly link the granting of a loan and the specific credit conditions to an (internal or external) rating, which to a large extent depends on the rated company's equity ratio. This puts further strain on SMEs' choice of capital structure, as a sufficient equity base turns into a prerequisite for any provision of debt capital in the first place (Reize, 2005). Since debt tends to be cheaper than equity, the optimal capital structure choice then boils down to maximizing the debt level, contingent on the ability to raise sufficient equity. The concept of capital constraints therefore usually refers to restrictions in the supply of debt capital, mostly bank loans, due to information asymmetries.

Which types of informational disadvantages may arise in the relationship between borrower and lender and what are their effects? In the decision of whether or not to grant a loan, potential lenders are concerned that they may – unknowingly – give credit to a company of high default probability (adverse selection). Over the course of the credit relationship the additional concern arises that borrowers – even those with high initial creditworthiness – may deviate to highly risky behavior (moral hazard). These fears can lead to the phenomenon that firms do not get as much credit as they would like, even though they are willing to pay the requested interest rate and meet other conditions set by lenders. Such **credit rationing** (Stiglitz and Weiss, 1981) occurs because moral hazard and adverse selection may even get worse if lenders raise interest rates in order to let credit supply meet credit demand: a high interest rate may induce low-risk borrowers to abstain from applying for loans, so that only the negative selection of high-risk borrowers remains in the market; likewise, a high interest rate may trigger more hazardous business behavior after loan approval since losses in case of default will be borne by both lenders and firm owners whereas excess gains accrue solely to the owners. As a consequence, an excessive credit demand may persist that cannot be satisfied.

According to this argument, firms may be capital constrained because lenders are not willing to supply any more capital at the going market rate, nor at higher rates. Put differently, credit rationing in this strict sense does not occur if firms are not willing to borrow at the offered interest rate, even if this rate is not reflecting the true creditworthiness of the borrower. Rather, it occurs because creditors do not want to lend, on no account. In a weaker sense, firms may be characterized as credit constrained if they cannot get as much credit as they would like, i.e. if their application for credit is declined. What do the data tell us with respect to these two criteria (the weak and the strong form of credit rationing)?

In a study based on the 2003 US Survey of Small Business Finances (SSBF) only 48.9% of the companies reported a need for credit at all. 35.1% report no problems in obtaining the credit; while 8.7% did not apply because of the fear of rejection. 1.6% of all firms sometimes did get approval and sometimes not, and only 3.5% of the firms were not able to obtain any loan from prospective lenders (Cole 2008b; own calculations). Taken together, firms applying for loans that were all the times or sometimes rejected represent a share of 5.1% of all firms in the sample. At the same time, these firms turned out to be significantly smaller, show more leverage and less liquidity than firms whose loan applications were approved (Cole 2008b). In total, credit availability seems not too big an issue for small firms: only 5.1% report difficulties in obtaining credit and these are – on average – less creditworthy than their peers. The analysis does not support the existence of a "financing gap".

Furthermore, Vos et al. (2007) find – for the US – that "financing and interest rates" only rank fifth in the "most important issues" for SMEs, as reported in the1998 SSBF survey. It ranks behind quality of labor, competition, other external problems and sales on rank five, with 7.1% of the firms mentioning it. Another 4.6% of the respondents name working capital as an issue.

A survey conducted by KfW in 2007 on German companies with business relations to KfW-bank delivers similar results as the earlier US surveys (KfW Bankengruppe, 2007). Among SMEs, only 5.5% report that they applied for a prolongation of lines of credit but were rejected. Yet, among large firms, only 1.6% of respondents give this answer. At the same time, 68.8% of all SMEs conducted investment projects over the previous 12 months. The proportion of investing firms strongly grows with firm size: among firms with annual turnover below EUR 1 million only 46.9% ran an investment project, among the mid-sized firms (annual turnover between EUR 10 and 50 million) 82.3% did. For large firms the ratio raises to 92.4%. Of the smaller firms that invest at all, roughly 50% invested to expand their business.[1] In other words, the majority of small and medium-sized firms seem to be relatively content with their business size. Among those firms whose loan applications for investment projects were rejected,[2] only 30.5% were not able to find alternative means of financing. For those who were able to attain alternative capital, in contrast, leasing seems to be the most important source of external financing, with trade credit following behind.

A study by Hommel and Schneider (2003) on German SMEs concludes from independent survey data that 42% (37%) of respondents experienced a reduction in short-term (long-term) loan availability in 2001. Loan rejections were reported from 31% of responding firms. Among the reasons for loan rejections, insufficient collateral and lacking equity base were the most frequently cited. Additionally, loan terms had changed: at the beginning of the 21st century, banks started to request more collateral and more extensive reporting. In particular the

[1] The figures for expanding investments run from 47.2% to 59.5% for SMEs. The survey, however, allows for multiple answers, thus giving a somewhat inconclusive picture with regard to the share of expansion investments. E.g. in the size class between 10 and 50 million Euro turnover, 59.5% of the firms conducted expansion investments, 36.8% cost saving, 44.4% replacement, 3.4% succession plans and 16.1% research and development investments.

[2] Reize (2005) concludes that the various types of German banks (savings banks, cooperative banks and private banks) do not differ in their credit decisions. His findings imply that in the 2004 KfW survey, 11.28% of firms received loan rejections. Surveyed companies include, however, also large firms up to an annual turnover of 500 million Euro.

latter feature seems to have been induced by the upcoming implementation of the Basel II accord that required a much higher degree of transparency from borrowing companies. With respect to an overall credit crunch, however, a Bundesbank report (Deutsche Bundesbank, 2002) claims no such constraints. A similar conclusion is reached in a study by Nehls and Schmidt (2003). They calculate separate credit supply and demand functions from a disequilibrium model and show that while an excess demand occurred in the second half of 2002, which seems to have been spurred by the large private banks rather than the savings or cooperative banks, a strict credit rationing à la Stiglitz and Weiss cannot be proven.

Results for French SMEs are provided by an empirical study by Dietsch (2003) on data between 1993-2000. He focuses particularly on the question in which way the consolidation of the French banking industry has affected SME financing. Analyzing the riskiness of SME loan portfolios, he finds that while credits to French SMEs are far riskier than loans to large firms, a portfolio of SME loans only bears low risk due to very moderate default correlations. Additionally, SMEs turn out to be relatively insensitive to macroeconomic shocks, at least compared to larger companies. Bank consolidation over the 1990s has led to a strong decrease in the number of banking institutions in France. The remaining players also follow vastly diverging strategies. Still, the proportion of SMEs in the business loan market has significantly increased during the 1990. Particularly the medium-sized firms have also increased the number of bank lenders and have raised their credit volume. At the same time, the number of small firms that successfully applied for credit has doubled. Overall, credit availability seems to have improved with the length of the relationship between borrower and bank lender. Dietsch (2003) concludes that credit rationing does not seem to be a problem for French SMEs.

A complementary study by Kremp and Philippon (2008) supports this finding. The authors report that at the end of the 1990s and the early 2000s, major changes in the ownership structure of French SMEs occured: whereas in 1997, 80% of SMEs were independent, in 2006, this fraction was only 50%. Since borrowing may be cheaper for the holding than for the – formerly individual – company, balance sheet information on an individual basis may paint a biased picture on SMEs capital structures. They conclude that financial constraints are among the most important reasons for a company to give up its independence – and thus to solve the capital problem. Still, Savignac and Sevestre (2008) find that small and / or innovative firms face higher latent interest rates than large firms, leading to an excessive unsatisfied demand for credit among French SMEs.

The only study – to our knowledge – that analyzes credit rationing in the strict sense à la Stiglitz and Weiss focuses on Italian data (Guiso, 2003). Drawing on data from the 1999 Survey of Manufacturing Firms which the investment bank Mediocredito Central conducts every three years, he shows that credit rationing is not a widespread phenomenon: it affects only 1.7% of all firms in the sample. Since Italian SMEs often do not use debt financing at all, Guiso (2003) questions the underlying motivation for this particular capital structure. Concluding from the survey data, it seems that the lack of debt financing is not due to a supply-side restriction but rather because firms do not want to borrow. Interestingly, firms with more equity are less likely to use financial debt. As such, it seems that equity is foremost used as a financing means in its own right and not (necessarily) as a vehicle to enable the company to raise debt.

8 The German Banking System

Why are small and medium-sized firms less affected from problems of information asymmetries than initially imagined? In this context, the particular role that German banks play for the financing of small and medium-sized firms has often been commented on (Elsas and Krahnen, 2003). The "Hausbank" concept is nowadays even seen as a synonym for relationship banking. According to Boot (2000), relationship banking (as compared to transaction banking) is characterised by three conditions:

1) "The intermediary gathers information beyond readily available public information;

2) information gathering takes place over time through multiple interactions with the borrower, often through the provision of multiple financial services;

3) the information remains confidential (proprietary)."

Furthermore, it is often said that Hausbanks bear a special responsibility for their customers, particularly in the case that borrowers face financial distress. According to the theory, the gradual removing of information asymmetry barriers allows the lender to smoothen credit conditions over time. As the ongoing sharing of information between borrower and lending bank strengthens the relationship, commitment between the two parties allows for intertemporal transfers: the bank may reasonably expect to earn high rents in the future, so that she may be willing to accept low profits (or even losses) at other stages of the business (Petersen and Rajan, 1995; Allen and Gale, 1999). Hence, the bank could offer a "cheaper" loan when business conditions are tight for the borrower and request higher interest compensation in more favourable times. The creditor-friendly German insolvency code certainly supports this channel even further.

However, due to the information monopoly of the relationship lender, a "hold-up" problem may arise that could lead to deteriorating credit conditions over the course of the relationship: a borrower's trial to raise debt capital from alternative financiers tends to be interpreted as a negative signal about his creditworthiness and is, due to the large relative information disadvantage of these external financiers, accompanied by a high risk premium. Knowledge of this effect, in turn, may be exploited by the incumbent relationship lender in the form of a substantial monopoly rent. While multiple bank financing may be helpful to reduce this risk of capture by a single Hausbank, the granting of a certain amount of monopoly power is necessary to ascertain the beneficial features of the relationship lending system: only the commitment of the two parties to uphold the relationship allows for intertemporal transfers, which leads to a comparably high credit availability even in financial distress.

Elsas and Krahnen (1998) have analyzed various aspects of credit availability on a sample of SME firms in Germany taken from 1997. Interestingly, they find that Hausbank customers do not face a different price setting in lines of credit than arm's-length customers. However, they provide evidence that Hausbanks indeed deliver a liquidity insurance to their borrowers: given a one-notch deterioration of the creditors' (internal) rating, Hausbanks increase their loan supply, while arm's-length lenders do not. A general study on the question whether relationship banking may help to reduce credit rationing has been conducted by Fischer (2000). He em-

ploys the frequency that a firm uses supplier discounts (trade credit) as a proxy for the existence of credit rationing and finds that indeed a Hausbank relationship reduces rationing of this type. More specifically, he proves that the higher the local bank concentration the less often firms will use trade credit. Additionally, he shows that – in accordance with Elsas (2005) – banks in more concentrated local debt markets acquire more information about borrowers than banks in a more competitive environment. As the creation of monopoly power is the main building block of relationship lending, the former result directly feeds back to the Hausbank system. As such, the traditionally information-intensive German banking system seems to be able to reduce capital constraints for small and medium-sized companies that tend to suffer most from information asymmetries between firm-owners and external financiers.

9 Further evidence on financing constraints

The evidence of relationship lending as a means to avoid credit rationing by Fischer (2000) strongly relies on the use of expensive trade credit as a measure of credit constraints. While the existence of this type of financing has triggered a lot of questions in recent years, many authors nowadays argue that trade credit is not too expensive relative to bank debt. As a reason, they state that trade credit offers additional features, in particular as an insurance against liquidity shocks, that cannot be supplied on cheaper terms by simple bank loans (Cunat, 2007). While it is true that particularly small, young firms rely on this type of financing, it has been found that trade credit is an effective way of easing potential financing shortages and coping with liquidity shocks. Gropp and Boissay (2007) have shown that firms pass on a significant fraction of their liquidity shocks down the trade credit chain. However, on an aggregate level, this interwoven set of credit contracts turns out to be counter-cyclical as large, liquid firms seem to bring in sufficient liquidity to absorb varying levels of defaults. Both relationship lending and trade credit may hence help SMEs to reduce credit constraints.

Recent tests for financing constraints also focus on firms' investment sensitivity to their cash flows. In a frictionless world without restrictions on financing, firms' investments should not depend on their cash flows after controlling for investment opportunities. This method has been brought forward by Fazzari et al. (1988) and is debated by a number of scholars (e.g., Kaplan and Zingales 1997, 2000; Gomes 2001; Moyen 2004, Schündeln 2007). At the center of the discussion is the question about how to control for investment opportunities correctly. After all, cash flows might be a good proxy for investment opportunities – and thus a high correlation just a technical effect and not signaling financing constraints. While Alti (2003) states that supposedly financially unconstrained firms actually show higher cash flow sensitivity in their investment behavior, Schündeln (2007) finds that small firms in developing countries are indeed financially restricted. These results cannot be applied to the developed world, however: Schündeln (2007) and Beck et al. (2008) show that regulatory and legal settings as well the development of the financial sector play a crucial role for SME financing. Perhaps the most applicable results with respect to German SMEs are derived by Wagenvoort (2003). Relying on a large dataset of European companies between 1988 and 2001, he finds that indeed the cash-flow sensitivity of firm investments is contingent on firm size: finance constraints seem to hinder the growth of small and very small firms. While medium-sized firms appear less financially constrained, their investment decisions still depend more on the availability of internal funds than the investment decisions of large firms. Reize (2005) sup-

ports these results for a survey of German SMEs. Yet, again, even though a qualitative effect of a financing gap seems to exist, its quantitative impact is not assessed. It may even be the case that the specific German banking system reduces the potential growth-reducing effect that any financing constraints could have.

10 Conclusion

Drawing on both theoretical and empirical studies on SME financing, we have tried to shed some light on the – politically highly relevant – question whether or not German SMEs suffer from an equity gap, or more generally from a financing gap. While we cannot rule out that some very small fraction of SMEs is financially constrained and that these circumstances may reduce their potential to grow, the major part of small and medium-sized companies does not seem to suffer from financial restrictions. As such, the qualitative effects of capital structure decisions on innovation and growth seem to be very small. On the contrary: German SMEs seem content with their size and while they do complain about financing conditions, we cannot find evidence of a strict credit rationing nor of a true equity gap.

We have to admit, however, that our analysis suffers from one major shortcoming: a severe selection bias, because all empirical analyses were based on "surviving" companies. E.g., we did not obtain any information on the financing decisions of firms that defaulted before the sample was taken. Thus, given that insolvency rates increased quite strongly over the last years (about 15,000 insolvencies reported by Creditreform in 1993, compared to about 37,000 in 2002; Hommel and Schneider, 2003), it is possibly not so surprising that the equity ratios of the "surviving" SMEs increased. However, even taking this effect into account, the strong rise in the level of equity – particularly among non-incorporated SMEs with about 700% between 1994 and 2004 – remains striking. It reveals, from our point of view, that the financing conditions of German SMEs are not a sign of deeper structural problems.

On this premise, political support of SME financing seems justified only for the very small fraction of companies that are strongly growth-driven. Given that economies of scale hold for the supply of unconventional capital means, it may be advisable to advance the development of further mezzanine instruments. Political support in order to reduce refinancing costs for the suppliers and spur standardization of these instruments could help to strengthen this growth process. On the other hand, any political action in the field of Mittelstand financing runs into the danger of producing windfall profits for those less growth-oriented firms that would have been able to obtain financing anyway. Governmental decisions very carefully will have to balance these opposing effects.

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