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## Demand side analysis of microlending markets in Germany

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July 2009

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## **ABSTRACT**

### **Demand Side Analysis of Microlending Markets in Germany<sup>\*</sup>**

In developing and transition economies, microlending has become an effective instrument for providing micro businesses with the necessary financial resources to launch operations. In the industrialized countries, with their highly developed banking systems, however, there has been ongoing debate on the question of whether an uncovered demand for microlending services exists. The present pilot study explores customer preferences for microlending products in Germany. Among the interviewed business owners, 15% reported revolving funding needs and an interest in microloans. We find that potential recipients of microloan products are retail business owners, foreign business owners, and persons who had previously received private loans. Furthermore, financial products should feature rapid access to short-term loans.

JEL Classification: G21, D12, M31

Keywords: entrepreneurship, microlending, market research

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# 1. Introduction

Self-employment has become a buzzword in European economic policy. In Germany, for instance, the number of self-employed persons has risen from 3.0 to 4.2 million in the last 15 years (see Piorkowsky and Fleißig, 2008). It is further estimated that every year up to 500,000 people start their own business, most of them as micro entrepreneurs with no further employees and small amounts of capital, usually below €25,000. Access to sufficient capital to start operations or further develop their activities is a difficulty faced by many of these businesses not only in Germany but also in other European countries (Eurobarometer, 2005).

To explain why businesses face such problems when accessing finance, the asymmetric information approach (see e.g. Hillier and Ibrahim, 1993) identifies two main reasons on the supply side: (1) micro businesses usually cannot provide collateral. As a result, they are unable to signal their creditworthiness, and banks are unable to assess the credit risk. (2) Owners of these businesses tend to take out relatively small loan amounts. The fixed costs of granting such loans tend to eat up more than the profits from interest payments. Therefore, institutional lenders using standard credit technologies consider loans to this group as unprofitable.

Evidence from developing, emerging and transition economies, however, has shown that lending in this market segment can be a profitable business if appropriate technologies - known as microlending - are used (Armendáriz de Aghion and Morduch, 2005). Microloans have a technical and a methodological component. From a technical point of view, they are sized at the lowest possible level. In Western European countries, any loan below €25,000 is considered as microloan. From a methodological point of view, as Armendariz de Aghion and Morduch [2000] put it, “documentary evidence tends to be de-emphasized relative to standard banking practices and local character assessment gains prominence.”

Recently, attempts have been made to use these technologies in industrialized countries. First successes of microlending approaches in Western Europe were reported by a French and a British microfinance institution (MFI), namely ADIE founded in 1988, and Street UK founded in 1999 (see EMN, 2006; CDFA, 2006). Based on these experiences the EU commission started a “joint action to support microfinance institutions in Europe” (JASMINE), an approach which should enable MFIs to get technical support and to use subsidies of the European Investment Fund as revolving capital for building regional microfinance funds. With the JASMINE initiative the EU commission emphasizes the importance of microfinance approaches as one instrument to realize the targets developed in the so called Lisbon strategy. Applying JASMINE to national institutions could, therefore, become a prerequisite

to expand the number of microloans serving the financial needs of small and micro entrepreneurs.

Given this decision it is crucial to analyze the potential demand for microloans in countries like Germany. This becomes even more important as there is a large number of initiatives similar to ADIE which were mostly financed with public funds, but never got off the ground. Their failure, though, cannot be explained by low repayment rates. Instead, these initiatives created products that took in particular care of the supply side problems in this loan segment. As a consequence, entrepreneurs simply failed to apply for funding. A second short-coming of these approaches was that the restrictions imposed for the use of public funds made it nearly impossible for the MFIs to develop products focused on their target markets.

Such experiences give reason to reconsider if MFIs should concentrate only on the supply side by designing microloans which mitigate problems of information asymmetries, or also on the demand side through products responding to customers' preferences. Woller (2002) advocates a radical shift in MFIs' policies, moving away from a 'product-driven' microfinance culture and giving priority to customer needs. However, to date, only little is known about customer preferences. By using a relatively small but unique German data set, our paper aims to close this research gap. We analyze the funding needs of micro businesses; we describe the intended use of funds acquired by the business owners, and identify the financial sources typically used by entrepreneurs to cover their financial needs. By focusing on business owners who financed their first three years' operations through loans, we reveal which businesses prefer microloans, and identify the product features that serve best their needs. Thus, based on our pilot study we provide a first assessment of the microlending market in Germany which can also serve as a role model for larger studies or for the analysis of similar markets in Western European Countries.

The paper is organized as follows. Section 2 reviews previous theoretical and empirical research results and outlines our research agenda. Sections 3 and 4 describe the data and present the empirical analysis. In Section 5 we provide a conclusion showing that microfinance in Germany (and other western European countries) will only be (more) successful if the peculiarities of both, the supply and the demand side of a microlending market will be adequately addressed.

## **2. Previous Research**

### **2.1 Microlending Theory**

In his review paper, Morduch (1999) demonstrates why micro businesses are excluded from access to credit markets and why microlending is apt to solve this problem. While finance theory generally posits that all firms have equal access to financial markets and that all share similar competitive positions (van Auken and Neeley, 1996), micro businesses - when compared to larger businesses - face more difficulties or are even excluded from access to credit markets.

A considerable body of theoretical literature deals with the idea that asymmetric information is the main reason of these specific difficulties (Jaffee and Russel, 1976; Besanko and Thakor, 1987a, 1987b). This idea rests on two assumptions about the lack of financial capital observed among micro businesses: (1) Lenders cannot distinguish between high and low-risk borrowers, and potential borrowers are short of standard collateral which is why they cannot easily signal their own risk-taking behavior leading from the lender's point of view to the typical problems of adverse selection and moral hazard (cf. e.g. Morduch, 1999). (2) Given that persons running micro businesses mostly ask for very small loan sizes, it is not feasible in the traditional banking system to substitute the missing signal by additional screening and monitoring efforts. As a consequence, credit is rationed where the amount lenders are willing to offer is limited, or where no lender is willing to make any loans to this kind of borrowers (Stiglitz and Weiss, 1981).

These problems can be addressed by implementing microlending technologies into the lending process: Financial statement analysis combined with collateral in the form of inventory and accounts receivable (being the typical banking practice in small business finance, for more details see Berger and Udell, 2003) is substituted by an assessment of various factors: the applicant's i) personality traits, ii) entrepreneurial abilities and iii) entrepreneurial knowledge. The information gathered is then evaluated based on a credit scoring methodology.

The asymmetric information approach also has implications for the demand side of loan markets. According to the pecking order theory (Myers, 1984), businesses adhere to a hierarchy of financing sources where cheapest funds are used first. As costs are also determined by the information problems of each capital source, Myers and Majluf (1984) expect that internal funds - own capital and cash flow - are the cheapest financial source for business owners, followed by funds and loans provided from family members and friends. If further funds from external sources are needed, loans from banks are preferred to external private equity such as venture capital (see Myers, 1984, or Scherr et al., 1993).

Concluding, the asymmetric information approach is apt to explain behavior of both sides of microfinance markets, according to which banks face adverse selection and moral hazard problems, while business owners are expected to prefer internal financing when available and debt over equity when external financing is required.

## **2.2 Empirical Evidence on Financial Sources of Micro Businesses**

Having shown that microlending is more than just lending very small amounts of money to business owners, this subsection presents an empirical overview on self-employment, the financial means which are typically used by self-employed and on financing constraints in Germany. Technically speaking, microloans are loans with a short term maturity (a maximum of 2-3 years) and loan sizes below €25,000. Businesses considered eligible for such a loan type are micro businesses where the business owner is a solo-entrepreneur or employs not more than 5 persons in the business and has a turnover below €1 million per year.<sup>5</sup> One may expect, however, that persons who are interested into these kinds of loans are typically business owners with a yearly turnover of less than €100,000

Against this background, the German MSME sector (the *micro*, *small* and *medium* sized enterprises) comprises of 4.2 million businesses in 2007. Around 90% of them have a yearly turnover of less than €1m, 70% of them of less than €100,000, and 56% are run by solo-entrepreneurs (see Piorkowsky and Fleißig, 2008 and Wallau, 2006). In recent years, the average year-to-year survival rate of all businesses has been 92.5% (Constant and Zimmermann, 2005). The number of start-ups was around 500,000 over the last years, with a relatively strong drop to 425,000 in 2007 (see IfM Bonn, 2008). It is estimated that every second firm was created out of unemployment (Caliendo and Kritikos, 2007).

According to the MSME-panel of the German state-owned bank KfW, 75% of all MSME did not use any external financing (KfW 2007). Very similar numbers were reported by Kohn and Spengler (2008) and in a much larger and representative study by Caliendo and Kritikos (2007). Further information on the business owners who made use of external financing, is reported in the KfW-panel (KfW 2007). They found that in almost all cases those 25% who needed external funds preferred loans and overdrafts.<sup>6</sup> Venture capital plays a negligible role. In every second case, loan volumes were below €25,000 meaning that around 13% of all existing MSMEs in

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<sup>5</sup> It is important to note that there is no common definition. The above definition resembles to the German Institute for Small Business Research (IfM Bonn). In the EU a micro-business is defined as a business with not more than 10 persons and a turnover of less than €2 Million. For an overview of definitions and data, see also the European Microfinance Network (EMN), 2006.

<sup>6</sup> Using the US data, Bitler, Robb and Wolken (2001) revealed similar evidence that commercial banks are the dominant source of financial services of these kinds of businesses while Harhoff and Körting (1998) found out that lending is typically heavily concentrated on one or two financing institutions in the MSME segment.



Germany operate with loan sizes below €25,000. However, these data give no clue whether business owners faced any financing constraints.

Little is known about the alternatives of borrowing capital below €25,000. Inside and outside the formal banking system micro business owners have some funding alternatives that are well documented. KfW offers several loan products aimed at small and micro businesses in their start-up phase. Maximum maturities vary between five and ten years, and maximum loan amounts range between €10,000 and €50,000. According to Evers and Lahn (2007), about 1,500 loans up to €25,000 have been extended by KfW in 2006. These are microloans only in terms of their size, though; the applied methods resemble those used for small business loans and not those presented in section 2.1.

Outside the formal banking system there are about 30 different regional or local MFIs, of which more than 10 joined the network of the German Microfinance Institute (DMI) which was found in 2004 and started operations in 2005 (see Kreuz, 2006). All of them apply to a certain extent microlending methods as described above. Another 2,000 loans were actually approved by these 30 institutions in 2006 (Evers and Lahn, 2007).<sup>7</sup> This indicates that there is a substantial gap between businesses operating with loans below €25,000 (namely 13% of all entrepreneurs or around 500,000 businesses if the methods of extrapolation employed in the KfW panel are correct) and those businesses which were financed with microloans.

Thus, there must be other sources of loans which are used by micro business owners in this sector. There are three more options: First, Berger and Udell (1998) emphasize the importance of private loans for this segment. Second, banks might also be willing to offer business loans below €25,000, or, third, business loans are replaced by consumer loans (for first evidence on the latter suggestion, cf. Kneiding and Kritikos, 2007). However, the above mentioned data give no information on these sources.

Last but not least we have to focus on the question whether micro businesses are facing financial constraints. Such constraints may have two aspects, namely higher efforts for capital acquisition (compared to larger companies) and complete exclusion from access to loans. There are several studies analyzing whether credit rationing is an economically significant phenomenon. For instance, in a Eurobarometer (2005) survey investigating MSME finance within the European Union, it was found that German owners of micro businesses seem to face greater hurdles in accessing loans compared to their European counterparts. When evaluating the quality of bank services in terms of consultancy, sector-specific know-

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<sup>7</sup> To compare these numbers with the two most prominent MFIs in Western Europe, ADIE in France financed in 2006 about 7,500 borrowers, while Street UK made about 2,000 loans.

how, general knowledge and expertise, and the suitability of the loan offers to customer needs, German banks fared below average. Three earlier studies (Egeln et al., 1997; Winker, 1999; and Audretsch and Elstons, 2002) found that smaller firms face more problems while acquiring capital than larger firms.<sup>8</sup>

### **2.3 Research Agenda**

The following major questions will be addressed in this article: To what extent are there institutions financing businesses with loans below €25,000? Is there further empirical evidence on financing constraints in Germany and is there demand for microloans beyond the observed financing volume? What are the product preferences of micro businesses and which variables are able to describe target groups for microloans?

To analyze these questions, we collected demand side data containing information (a) on the financing patterns of micro business owners (also in comparison to small businesses), (b) on their actual financing sources and (c) on their attitudes towards typical microlending products.

As we examine the sources of capital available to these businesses, we are able to give further evidence to what extent micro businesses

- have investments below €25,000,
- face problems when trying to access loan volumes below €25,000,
- are excluded from access to finance.

Based on these results, we compare in a second step the respondents with preferences for microloans with those respondents who were not interested in microloans, taking into account various characteristics such as previous experiences with banks, product preferences, and funding patterns (i.e., the amounts of capital needed each year). This enables us to identify the typical characteristics of potential microfinance clients and to describe the product features appropriate to increase the demand for microloans.

Our approach has several advantages. First, our data set contains also information on failed businesses so that we are able to mitigate survivor bias. Second, we do not only observe the static results of financial decisions but are also able to make a comparative static analysis revealing the efforts applicants faced until a loan contract was realized, thus giving further information on financing problems. Third, among all observed business owners we identify those who would be interested in microloans enabling us to distinguish them from other business owners.

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<sup>8</sup> As was highlighted by Block et al. (2008) some of these studies may suffer from a survivor bias as only successful firms were in the data sets while failed firms were underrepresented.

### **3. Sample description**

#### **3.1 Overview of descriptive statistics**

Our data is derived from a survey that provides information on the sources of finance of different business owners during their first three years of operations. The survey was conducted between mid-October and December 2005 in the form of 213 telephone interviews with people who had become entrepreneurs during the past five years. Survey participants were randomly selected from various client lists provided by German start-up centers in the provinces of Hesse and Bavaria. The lists were comprised of clients who had taken part in coaching and seminars held between 2000 and 2003 and who were then preparing to launch their own business. Thus, comparing to most previous studies this data set has one advantage and one disadvantage. On the one side, it does not face a survivor bias as it contains successful as well as failed business owners. On the other side, we cannot exclude that there are problems of inverse causality and of selectivity as the persons we surveyed participated in coaching and seminars.<sup>9</sup>

The interviews were held using a standardized questionnaire which we had developed on the basis of 34 non-standardized personal interviews with micro business owners, as well as through a focus group comprising seven participants. The majority of the questions were closed-ended which enabled respondents to answer unambiguously. When necessary, the interviewer gave additional explanations.

The questionnaire was designed to collect a wide range of information and was divided into two main parts. The first contained questions pertaining to funding patterns and sources of capital during the first three years of business operations. The second part dealt with possible funding problems encountered and interest of respondents in microlending schemes. We interviewed one person per firm (the owner-entrepreneur), and in the case of team-run companies, only the main person in charge. An important advantage of our data set is that we were able to avoid hypothetical answers. At the time of the interview, all respondents were able to provide a retrospective view of funding issues since all of them had been either active in the market for three to five years or failed during this time span.

- insert Table 1 about here -

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<sup>9</sup> In this context it is also important to note that two years later the same questionnaire was also used among 101 small and micro entrepreneurs in East Germany which were randomly selected from various client lists of start-up centers and of chambers of commerce in the region of Brandenburg. Interestingly, the results of the East German data were very similar when compared to the results which will be presented in sections 3 and 4 of this paper.

Within the whole sample, 70% of respondents started without any external funds<sup>10</sup>, 19% received a loan from a bank, and 11% from friends or family. Another 11% faced rejection from banks, 5% of the complete sample expressed their need for outside finance but neither banks nor friends and family provided them with a loan (see Table 1). As shown in section 2.2, other studies reported similar shares of micro entrepreneurs who received loans or launched their business without any need to get outside finance.<sup>11</sup> Thus, we conclude that with respect to the basic financial variables (in terms of the shares of outside finance) the average outcomes of our sample are similar to the average outcomes of larger representative samples which were observed in the same time period.

Beyond these basic results our data allow a deeper understanding of financing behavior of MSME businesses by making use of a comparative static analysis. We reveal the paths of capital acquisition which the borrowers had to pass once they decided to acquire external finance. Our data show that 64% of the persons stated that they started their business without any external finance (not even from friends and family) and that they neither needed any outside finance nor intended at any time to seek for outside finance.

- insert Figure 1 about here -

In their first three years of operations, the other 36% of respondents were in need of outside finance. 84% of this group applied for a bank loan,<sup>12</sup> and almost two-thirds were successful, i.e., they were able to cover their funding needs through an installment loan or an overdraft facility.<sup>13</sup> We also investigated whether those borrowers who finally succeeded in getting a loan from a bank faced temporal financing constraints in the sense that they had to apply more than once for a loan. Indeed we find that almost two thirds of respondents went to more than one bank to receive a loan, which resulted in elevated application efforts.

Loan sizes ranged between €500 and €300,000. 75% of the loans were larger than €10,000; on the other hand, 75% of the loans were also smaller than €25,000. Among

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<sup>10</sup> The two most apparent reasons are i) low funding needs for the majority of start-ups, and ii) government support that strengthened the equity base.

<sup>11</sup> In a similar study, Fraser (2005) found that also in the UK, almost two out of three businesses had used personal savings as the principal source of finance to start the business, and one-third had received funds through a bank loan or a private loan. In this study similar to our approach, private loans from friends were counted as loans.

<sup>12</sup> Over 90% of business owners who had applied for a loan had a formal meeting with a bank employee where they explained their business concept. Of those who visited a bank, 72% inquired about a loan, 12% about an overdraft facility, and 16% about both.

<sup>13</sup> We cannot exclude that this rate of loan approval might be influenced by a sample selection bias as the interviewed business owners had received training and coaching during the start-up of their business. However, it should be emphasized that Kohn and Spengler (2008) report of a similar acceptance rate of loan applications. The same holds true for acceptance rates when the same questionnaire was in East Germany, see Kritikos and Kneiding (2008).

those who received bank loans, less than 5% of the subsample still required additional funds showing that when banks provide financial assistance to young businesses, the loans they provide are of sufficient size.<sup>14</sup>

The right sub-sample on the middle fraction of Figure 1 provides further information on those 16% of borrowers who needed outside finance but did not apply for a bank loan. They had access to other sources (loans from friends and family or from an existing overdraft). These persons had, thus, need for external finance but decided not to base the financing of their business on a new bank loan.

The subsample on the bottom right is comprised of business owners who did apply for a loan maybe more than once but were rejected. The reasons for rejection were unknown since banks usually do not disclose this information to applicants.<sup>15</sup> 36% of all applicants were rejected by banks. About half of the rejected loan applicants reported a funding gap or adjusted their investment volumes, while the other half got access to private loans.

Interestingly, survival rates differed between those who needed no outside finance or received a loan from a bank (being put together in one group) and those who needed outside finance but started with a private loan or no loan. Without being able to analyze any causality, in the first group (businesses which were started without outside finance or with a bank loan) the survival rate was significantly lower (on the 1% level when using the Fisher test) when compared to those who needed outside finance but started without a bank loan.

Observation 1: Our comparative static analysis revealed that 36% of all business owners had a demand for outside finance. Of them 21% received a loan from a bank after the first application, another 33% also received bank loans but only after having applied more than once for a bank loan. 16% of those who needed outside finance did not apply for a bank loan and 30% applied for a bank loan but were not able to sign a loan contract.

As earlier studies found that raising capital poses a problem to business owners (Egeln et al., 1997, Winker, 1999, and Audretsch and Elstons, 2002), we can confirm that such financing problems exist and we were able to give new insights by making use of a comparative static analysis in what way financing problems arise and how they are handled by the business owners.

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<sup>14</sup> This coincides with the findings of Lamberson and Johnson (1992) who interviewed 140 firms on their financing experiences, of whom only 6% reported dissatisfaction with the amount of credit available.

<sup>15</sup> Evidence from interviews with loan officers reveals that the main reasons for rejection are (i) low loan volumes, (ii) poor business concepts, (iii) redlining of certain industries (e.g. retail), and (iv) a low degree of borrower creditworthiness (IAB et al., 2005).

### 3.2 Comparison of borrowers vs. non-borrowers

For the subsequent analysis, we split the sample into two groups: those 36% of the persons in the sample who required (not received) outside finance will be called ‘borrowers’. Those persons who never asked for a loan (not even from friends and family) because they had sufficient equity capital to finance their business (64% of the sample) will be called ‘non-borrowers’.

This distinction is made for the following reasons: it seems appropriate to observe those persons more intensely who were in need of outside finance in the past, as they represent the potential customer group for microloans. (Among this group are also persons who applied for loans and were actively excluded.) As it would have made less sense to ask persons with no need for outside finance about their inclination towards a microfinance product - their statements would be hypothetical in this respect – we explicitly decided to ask non-borrowers for the main reason why they refrained from borrowing.<sup>16</sup>

Among the non-borrowers roughly two-thirds had no need for larger amounts of capital during the first three years of operations, or had enough funds (either from their own savings or from public support instruments such as the bridging allowance, for more details on the latter, cf. Caliendo and Kritikos, 2007). About one-third of all non-borrowers said that they were afraid of indebtedness which stopped them from applying for a loan. They adjusted the size of their business to their own existing funds. A certain (but unknown) share of non-borrowers might be excluded from access to bank loans, even though it is not possible to verify this assumption.

Table 2 compares characteristics of borrowers and non-borrowers. The variables are classified according to the attributes describing the business owner (personal characteristics), those describing the business (business characteristics), and the funding needs of the firm for each of the first three years (financial characteristics).

- insert Table 2 about here -

Thirty-seven percent of the borrowers had started retail or crafts businesses, compared to a mere 11% of non-borrowers. A Fisher test reveals that retail ( $p=.049$ ) and crafts enterprises ( $p=.048$ ) exhibit significantly greater financial needs during the first three years than do other lines of business. This is plausible given that most of the businesses require higher investments for purchasing physical stock or machines.

Funding needs of borrowers and non-borrowers during their start-up period average out at about €15,000. Table 3 gives additional information beyond the overall

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<sup>16</sup> We were encouraged to do so as those persons from the pre-tests and from the focus group who had no need for outside finance clarified in a strict way that they would not be interested in a micro-loan which is why they were not able to give meaningful answers to specific questions about features of such loans.

average, namely the funding needs separated for borrowers and non-borrowers for each of the three years in consideration. A clear distinction can be observed (a) between year one and the two following years, as well as (b) between borrowers and non-borrowers. While more than 80% of the non-borrowers needed less than €10,000 in the first year, this was the case for only 47% of the borrowers: more than a quarter of these businesses required more than €25,000. The levels of funding needs in the two subsequent years differ significantly from the first, while years two and three both exhibit similar patterns. Obviously, in both groups, there is a high percentage of businesses that exhibit no funding needs at all after year one. (c) Moreover, we are able to reveal two kinds of investment patterns: one group of businesses requiring one-time funding, and a second group with recurring funding needs.

- insert Table 3 about here -

Respondents were asked to specify the main intended use of funds in each of the three years. A large percentage of businesses used the funds to cover start-up expenses such as IT infrastructure, office equipment, and materials for their first fiscal year. What is crucial to know for the design of microfinance products is that liquidity finance played an important role for the borrower group in the two following years: more than 50% reported liquidity gaps that had to be closed, for instance, the entrepreneur's own costs of living and pre-financing customer orders. Cases of 'emergency finance', such as back duties falling due, were also mentioned.

## **4. Empirical analysis**

In this section, we will concentrate on persons with *need* for 'outside finance'. This is an umbrella term for all financial resources that do not constitute equity capital, for instance, bank loans and private loans obtained through friends or relatives. In this respect, we employ a broad definition of outside finance, as our sample contains also persons who were in need of loans but were rejected from banks or who used loans from their personal environment.

### **4.1 Direct demand analysis**

A straightforward way of understanding the demand for a certain product is asking potential customers directly about their preferences. Two methods were employed throughout the course of the interview. In the first version, respondents were asked to name the three most important product criteria a microloan should have; the second approach required them to rank given criteria on a scale from 1 to 5. However, the information provided was inconsistent: while the unguided questions prompted

answers mostly related to interest rates,<sup>17</sup> then to maturity, and flexibility of the loan product, the ranking exercise showed a strong preference for ‘soft’ criteria like customer liaison and support. This reveals an important weakness of direct demand analysis: answers are strongly influenced by the survey format, and thereby lead to inconclusive results. This problem can be mitigated by presenting respondents a generic microloan and thereby indirectly eliciting their preferences.

#### **4.2 Indirect demand analysis: Tests and Results**

We presented the following typical properties of a microloan to all persons who needed external finance. The features are based on actual microloans offered in countries such as the UK or France.<sup>18</sup>

- the loan value varies between €1,000 and €10,000;
- the term of each loan ranges between one and two years;
- there is no amortization-free period;
- the repayment scheme is fully flexible (comparable to an overdraft facility);
- applicants are informed of the credit decision within five days;
- interest rates amount to approximately 20% per annum;
- the loan officer acts as a partner to the client and problems are solved cooperatively;
- different kinds of collateral can be used.

It was mentioned explicitly in the interview that loans with these characteristics are only offered by MFIs in these countries. Respondents were then asked whether they would ‘buy’ such a loan. If respondents rejected it, they were asked why. If they said that interest rates were the main reason, we presented a showcase calculation giving interest payments in absolute terms (a strategy commonly used by MFIs). Respondents were then asked if this display would change their minds. A dichotomous variable ‘target group’ was defined to take the value 1 if respondents were interested in the product and 0 if they were either not interested or not sure. 31 respondents (41% of the borrower group) revealed their interest in a microloan.

In order to explore what kind of experiences all persons of the borrower group had during their bank meetings and which product features are important to these persons, all respondents were asked to rate various product features and the service quality they experienced during their most recent bank meeting on a Likert-type scale varying from 1 (strongly disagree) to 5 (strongly agree). More specifically, we then compared the answers on these questions between the two groups. To do so, we employ a Mann-Whitney U test to analyze group-specific differences.

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<sup>17</sup> It is certainly not surprising that many persons being asked about product features will demand low prices, in this case interest rates, in the first place. However, such information does not allow discriminating between persons who are interested in a microloan and those who are not.

<sup>18</sup> Specific product features are discussed, e.g., in Copisarow (2000), Vigenina and Kritikos (2004), or EMN (2006) among others.



#### 4.2.1 The Impact of Previous Experiences with Traditional Banks

We start with the experiences persons reported from their bank meeting, and we compare persons who showed interest in microloans (abbreviated as target group members ‘T’) with those who did not (‘NT’). Lower mean ranks for those who were interested in microloans indicate that the sum of the ranks must be smaller than the sum of the ranks for those who were not. Table 4 illustrates the results. The mean ranks indicate that micro business owners who were interested in microloans rate the bank’s customer service lower than the NT-group. Moreover, for three items we observe that all differences in the mean ranks are weakly significant.

- insert Table 4 about here -

In this context, however, it is important to note that among those persons interested in microloans there is a higher share that was rejected from a bank (namely around 50%), while rejection rates among persons who were not interested in microloans were only little more than 20%. Therefore, the data may contain a success bias as those who received a bank loan may evaluate their meetings with the bank more positively. On the other hand, the bad experience of not receiving a loan may result in a negative evaluation due to the unsatisfactory outcome.

Therefore, we repeated the comparison of persons who were interested in a microloan with the NT-group, but concentrated in both groups on those applicants who *received* a loan. Thereby, we are able to control for the above mentioned success bias. Again, we apply a Mann-Whitney U test. Table 5 presents the results.

- insert Table 5 about here -

Interestingly, the findings from our previous results are unambiguously confirmed. Business owners who showed an interest in microloan products had significantly worse experiences during their bank meetings than the NT-group, even if both groups received a bank loan. The target group’s evaluation of the meetings was significantly less positive, and they indicated that they had been taken less seriously as fully fledged clients. Furthermore, their responses differed greatly regarding whether bank employees understood their business concepts and provided them with sufficient information on the terms and conditions of the possible loan products.

Observation 2: Prior negative experiences with banks are positively correlated with target group membership, even if the business owner received a loan from a bank.

#### 4.2.2 Crucial product features

With respect to the second set of questions, we aimed to find out which product features are important to potential microloan clients.

- insert Table 6 about here -

The rank-sum test reveals two significant differences between the two sub-samples (see Table 6). First, business owners who showed an interest in microloans stated that they operate in segments that demand fast access to loans. Second, they were willing to pay higher interest rates for faster access to loans. Interestingly, product features (which were named as important when directly asked) like flexible repayment schemes, amortization-free periods, and individual support from a loan officer are clearly not important enough to allow distinctions to be drawn between the two groups.

Finally, we analyzed the correlations between bank assessments and product features. Our results show that applicants who gave an overall bad rating of bank meetings were actually willing to pay higher interest rates for loans. The same holds for those who stated that they had not been treated as fully fledged clients.

Observation 3: Borrowers who are interested in microloans are prepared to pay higher interest rates if, in return the access to the loan is fast and easy.

### **4.3 Do target group members exhibit a typical financing pattern?**

We also aimed to find out whether persons interested in microloans exhibit a typical financing pattern. To analyze this question we used again target group membership as the defining variable and compared the financing patterns among the two groups (see Figure 2). There is a clear discrepancy between the funding needs revealing that borrowers interested in microloan products exhibit a specific financing pattern. Over the three-year period, the target group exhibits fairly constant funding needs, while the other group of persons (who do not need any microloan access) reports higher funding needs in the first year and rather low needs in years two and three. An ANOVA test was conducted to compare the groups' funding needs in each year, yielding a significant F value only for the first period. We presume that a lower level of start-up finance is a distinguishing feature of the target group.

- insert Figure 2 about here -

Unlike non-target group members, the target group reported an average of €6,000 to €12,000 per year over the three-year period.<sup>19</sup> This is a possible benchmark loan size for microloans. Funding needs of non-target group clients, in contrast, average at €19,000<sup>20</sup> in year one and drop to far below €5,000 in the subsequent two years. The higher funding volume in the first year might indicate that these borrowers have received bank loans that are generally approved only beyond a certain amount. In this case, banks are usually more willing to finance subsequent loans. Our analysis

<sup>19</sup> Figure 2 is adjusted for seven outliers within the borrower group as they distorted the means quite heavily (including the outliers, means oscillate between €15,000 and €20,000). The 75<sup>th</sup> percentile including outliers is € 25,000.

<sup>20</sup> The average is € 32,000 if we do not adjust for outliers.

also showed that these borrowers were granted overdraft facilities significantly more often than target group members in the years after founding the business.

Equity ratios of the two groups display a palpable discrepancy as well: target group members continuously exhibit lower equity ratios than non-target group members. An ANOVA test confirms statistically significant differences for the first year ( $p=.02$ ). As a certain amount of equity capital is the necessary precondition for receiving a bank loan, it is quite probable that target group members are more often excluded from the formal banking system. Therefore, microloans present a viable funding alternative and higher interest rates do not deter them.

Observation 4: Compared to non-target group members, microloan applicants have i) lower funding needs during the start-up phase, ii) more evenly distributed funding needs, and iii) less equity.

As most existing MFIs – not only in Germany but also in most Western European countries - offer loan products only to start-ups in year one, this observation probably explains why there is such an exceptionally low demand for these products.

#### **4.4 A model for determining target group membership**

In order to determine relevant factors affecting target group membership, a model for the complete borrower group was employed. A binary logit regression was used with ‘target group’ as the dependent variable. In Model A, personal explanatory variables were applied. The business variables were added to perform a second Model B. Finally, an extended Model C was estimated, in which financial characteristics of the firm were included. The improvement in overall model fit was assessed with the pseudo  $R^2$  measures Nagelkerke  $R^2$  and Cox & Snell  $R^2$  (see also Hair et al. 2005; Hosmer and Lemeshow, 2000). In combination, they indicate that Model A accounts for more than 25% of the variation in the target group membership. Adding further variables in Models B and C leads to substantial improvements in model fit, with Model C accounting for at least 50% of the variation between the target groups.

Table 7 reports the estimation results of the three models employed. The business owner’s age does not have a significant impact on target group membership. The same holds for gender, which is only weakly significant in Model C. Foreigners have a higher propensity to be interested in microloan products, which could be due to the fact that they are more often excluded from the banking system.<sup>21</sup> Concerning the education variables, master craftsmen have a significantly lower propensity to belong to the target group, which is indicated by the negative sign of the dummy. They

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<sup>21</sup> Blanchflower et al. (2003) find similar evidence for the US credit market.

usually have higher funding needs during the start-up period due to more expensive equipment than, for example, businesses in the service sector.

- insert Table 7 about here -

With respect to the business variables, we observe that firms operating in the retail business have a strong propensity towards microloans. This coincides with our findings that potential microloan clients need fast access to funds. Retail business is traditionally characterized by near-term funding needs, often triggered by the requirement to pre-finance inventory (van Auken and Carter, 1989). The other industry dummies have no significant bearing on target group membership. We therefore conclude that being a retail business is the only relevant firm characteristic that determines target group membership - a result that coincides with the evidence from many countries when microfinance products were introduced (see e.g. Kritikos and Vigenina 2005) and with the anecdotal evidence that owners of firms in the retail business sector are “redlined” by commercial banks.<sup>22</sup>

Model C contains a set of dummies providing information on the firm’s funding characteristics. Businesses that received a private loan during their first three years of operations tend to show a significantly higher interest in microloans. Anecdotal evidence from the interviews confirms that people who have received funding through private loans are reluctant to borrow from friends and relatives in the future, as this implies a certain kind of social dependency. Applicants who had previously received a bank loan are less likely to belong to the target group due to their preference for the lower interest rates offered by banks. This confirms the conjecture we made when analyzing funding patterns. Finally, the dummy ‘funding needs in year two or three’ does affect target group membership positively. This validates our financing pattern analysis, which showed rather constant funding needs for the target group and therefore an elevated need for finance after foundation of the business.

Observation 5: Business owners who are interested in microloans can be found among foreign and among retail business owners as well as among those who had previously received private loans. Those, who showed investment patterns with constant investment volumes over the years, and those who needed finance in the years after business foundation, were also more likely to belong to the target group.

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<sup>22</sup> Interestingly, in the East-German sample also business owners from the service sector were interested in microloans. This is the only difference in the observations between West- and East-Germany, see also Kritikos and Kneiding (2008).

## 5. Conclusion

It almost goes without saying that micro businesses have more difficulties in getting outside finance than larger firms. In response to a potential demand for microfinance, several MFIs have been set up during the last decade in Germany (rather late compared to countries like England or France) offering microloans particularly to start-ups. However, their outreach remained far below expectations. Their disappointing experiences revealed that beyond the basic insights that business owners (also in Germany) face higher financing problems the smaller their firms are, little is known about financial sources micro entrepreneurs are making use of.

This pilot study investigates the demand side of this market segment in Germany. We conducted a first survey of 213 entrepreneurs, and identified their funding needs, their financing problems and their product preferences with regard to microloans. Moreover, we were able to reveal which groups express specific interests in microloans. Two out of three business owners in our sample reported that they were able to operate without outside finance and that they were not interested in taking any loan from banks, friends or family members. Among the other business owners who were in need of outside finance, little more than half of them were able to get a loan from banks, while the other half was rejected or did not try to get a bank loan; thus the second half started with loans from friends or family, reduced their investment volume or faced liquidity constraints.

Concerning the extent of the problem from a market-based point of view, our results can be interpreted in two ways: When related to the overall number of entrepreneurs it seems as if only a minority of businesses is actually excluded from access to outside finance which signals that the share of underfinanced micro business owners is negligible.<sup>23</sup> However, as it is not possible to reveal whether persons who did not apply for a bank loan are also excluded from access to credit, it is more meaningful to relate persons who had no access to bank loans to those who applied for a loan. In this context the rate of financing problems is substantial, as we showed applicants had to apply more than once for a bank loan or were completely rejected.

Based on these findings, we analyzed the potential demand for microloans. We found out that in our sample little less than half of the business owners being in need of outside finance were interested in a microloan with all its specific features. We consider these people to be members of the target group while we termed persons who had no interest in microloans as non-members. As we found two different financing patterns, we are able to further specify the target group: non-members

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<sup>23</sup> This kind of policy is followed for instance by the German State owned bank KfW – see their recent report on microfinance, KfW (2008).

needed funds particularly during their start-up phase, while target group members exhibited fairly constant funding needs over the first three years of operations and significantly lower funding needs than the non-members in year one. We, thus, revealed a kind of investment pattern to which traditional banks have not yet adjusted and which fits to the approach of microfinance products.

We show that MFIs need to focus on certain types of potential clients that are particularly interested in microlending products; in our survey these were migrants and retail business owners, persons who received loans from their private network or who were dissatisfied with the service quality offered by banks where they had felt patronized by loan officers. Moreover, the decisive features to create a demand for microlending products at higher interest rates are: quick and easy access to loans, a high probability of loan approval once a business owner decided to apply for a loan, and an environment which does not remind the clients of their last bank visit.

In order to provide such good service quality to their customers, MFIs will have to employ professionally trained loan officers who are able to put the crucial product features into action and to carry out effective screening procedures at the same time in order to maintain a low percentage of high-risk clients. Only then will an MFI successfully attract customers and be able to promote its unique advantages over commercial banks.

Our research, although relatively small in terms of sample size, also gives preliminary evidence that by targeting only start-ups the existing government-owned or government-financed MFIs unnecessarily confined their target markets. Furthermore, the loan products they offered seemed to be inappropriate to the demand of their potential clients.

In this context it is also necessary to ask whether improving the access to external finance for micro entrepreneurs is an effective strategy from a more macroeconomic point of view. One might argue that, if micro entrepreneurs partly cannot obtain external finance without new microloan products, larger firms who have access to outside finance might take over the market shares of the excluded companies so that the overall economy is in the same state without a microfinance approach. However, there are several reasons why access to microloans is an important issue. Most prominently, competition increases if micro entrepreneurs do not face higher barriers to financial means than larger firms which is why micro businesses should at least have similar options of accessing external finance. It could be further argued that micro entrepreneurs are better able than larger firms to serve the individual customer needs and by doing so micro entrepreneurs may contribute to the growth of the economy. Last but not least, it is important from the labor market's point of view to provide micro entrepreneurs with access to finance given that with micro funding

available, entrepreneurs are better able to create and maintain their own job and, with a certain probability, additional jobs as well.

We conclude that, although different and certainly smaller than expected, there are markets for microlending in industrialized countries such as Germany. They have a potential to further grow especially if there should be a latent demand among those business owners who were afraid of asking for a loan. To this end, additional research with larger survey data would be helpful.

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## Appendix

*Table 1: Overview over differing shares borrowers and non-borrowers.*

The share of borrowers that	Percent per subgroup of borrowers (N= 76)	Percent overall (N=213)
Used bank loans	54%	19%
Were rejected from banks	30%	11%
Used Private loans and/or equity without having asked for a bank loan or after rejection at bank	30%	11%
Had funding gap after rejection	15%	5%

*Table 2: Descriptive Statistics for the two subsamples.*

Variable	Borrowers		Non-borrowers		Chi <sup>2</sup> Values
	N	Mean	N	Mean	
<b>Owner-Entrepreneur Characteristics</b>					
Female	76	0.41	137	0.39	0,38
Foreigner	76	0.09	137	0.02	5.39**
Education					
Academic	76	0.42	137	0.53	2.14
Master craftsman	76	0.26	137	0.20	1.24
Age	76	42.68	137	44.80	-
<b>Business Characteristics</b>					
Retail	76	0.13	137	0.04	6.75***
Crafts	76	0.24	137	0.07	12.94***
Liberal profession	76	0.13	137	0.20	1.46
No. of employees	76	1.13	137	0.31	17.46**
Team foundation	76	0.17	137	0.07	5.86**
<b>Financial Characteristics</b>					
Funding needs year 1 ('000 €) <sup>a</sup>	66	20.17	130	7.92	-
Funding needs year 2 ('000 €) <sup>a</sup>	66	5.3	130	1.97	-
Funding needs year 3 ('000 €) <sup>a</sup>	66	5.3	130	1.33	-

\*\*\* significant at a 1% level    \*\* significant at a 5% level    \* significant at a 10% level ('-' indicates that more than 10% of cells have expected count less than 5)

<sup>a</sup> adjusted for outliers (funding requirements exceeding €100,000 in at least one year)

Table 3: Comparison of funding needs between borrowers (B) and non-borrowers (NB), in %.

	Year 1		Year 2		Year 3	
	B (N=76)	NB (N=137)	B (N=76)	NB (N=137)	B (N=76)	NB (N=137)
<b>None</b>	2.6	13.1	50.0	65.0	52.6	65.7
<b>Less than €5,000</b>	19.7	43.8	25.0	24.1	26.3	26.3
<b>&gt; €5,000 – €10,000</b>	25.0	24.1	11.8	8.0	9.2	6.6
<b>&gt; €10,000 – €25,000</b>	23.7	14.6	9.2	1.5	6.6	1.5
<b>&gt; €25,000 – €50,000</b>	19.7	3.6	1.3	1.5	2.6	0
<b>More than €50,000</b>	9.2	0.7	2.6	0	2.6	0

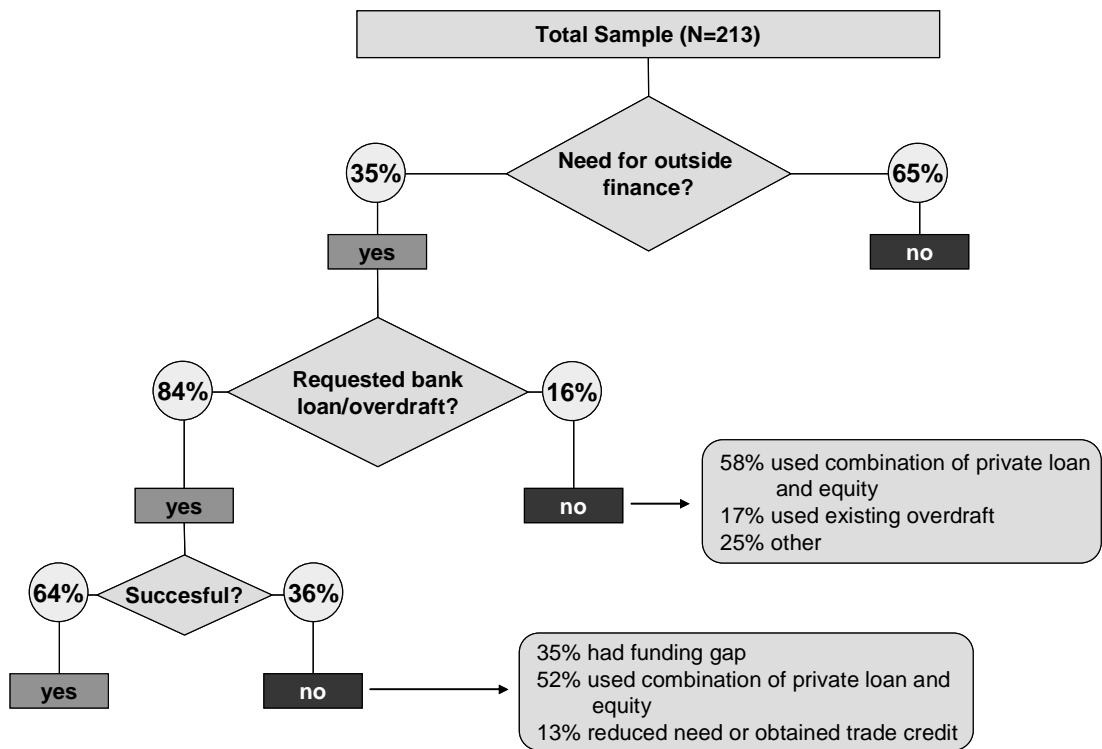


Figure 1: Overview of the subsamples.

*Table 4: Comparison of target group (T) and non-target group members (NT) (N=74).*

Statements	Mean ranks		z-value (Prob >  z )
	T	NT	
All in all, I have a positive impression of my meeting(s) with the bank(s).	26.96	31.94	-1.112 (0.266)
I felt I was taken seriously and treated as a fully fledged client.	24.91	33.25	-1.86 (0.063)
I had the feeling that the loan officer to whom I spoke understood my business plan.	24.27	31.97	-1.754 (0.079)
I received competent advice concerning relevant products.	23.45	26.87	-0.83 (0.407)
I received comprehensive information on all terms and conditions.	19.22	26.47	-1.768 (0.077)

*Table 5: Comparison of target group (T) and non-target group members (NT) who received a loan (N=40).*

Statements	Mean ranks		z-value (Prob >  z )
	T	NT	
All in all, I have a positive impression of my meeting(s) with the bank(s).	13.91	22.61	-2.47 (0.014)
I felt I was taken seriously and treated as a fully fledged client.	14.05	22.35	-2.27 (0.023)
I had the feeling that the loan officer to whom I spoke understood my business plan.	15.55	21.65	-2.03 (0.042)
I received competent advice concerning relevant products.	18.91	20.77	-0.99 (0.323)
I received comprehensive information on all terms and conditions.	16.14	21.63	-1.71 (0.088)

Table 6: Comparison of target group members (T) and non-target group members (NT) (N=74).

Statements	Mean ranks		z-value (Prob >  z )
	T	NT	
I am agreeable to accepting higher interest rates when taking a loan if this allows more flexibility in repayment schemes.	37.90	37.21	-0.28 (0.8)
In my line of business, it is crucial to receive a loan rapidly when necessary.	48.34	28.29	-2.4 (0.02)
It matters to me to pay no amortizations, especially in the first months after borrowing.	39.10	35.64	-0.92 (0.36)
I am willing to pay higher interest rates for faster access to loans.	44.17	31.62	-2.02 (0.04)
Individual support given by the contact person is as important to me as to the terms of a loan.	36.79	37.90	-0.25 (0.82)

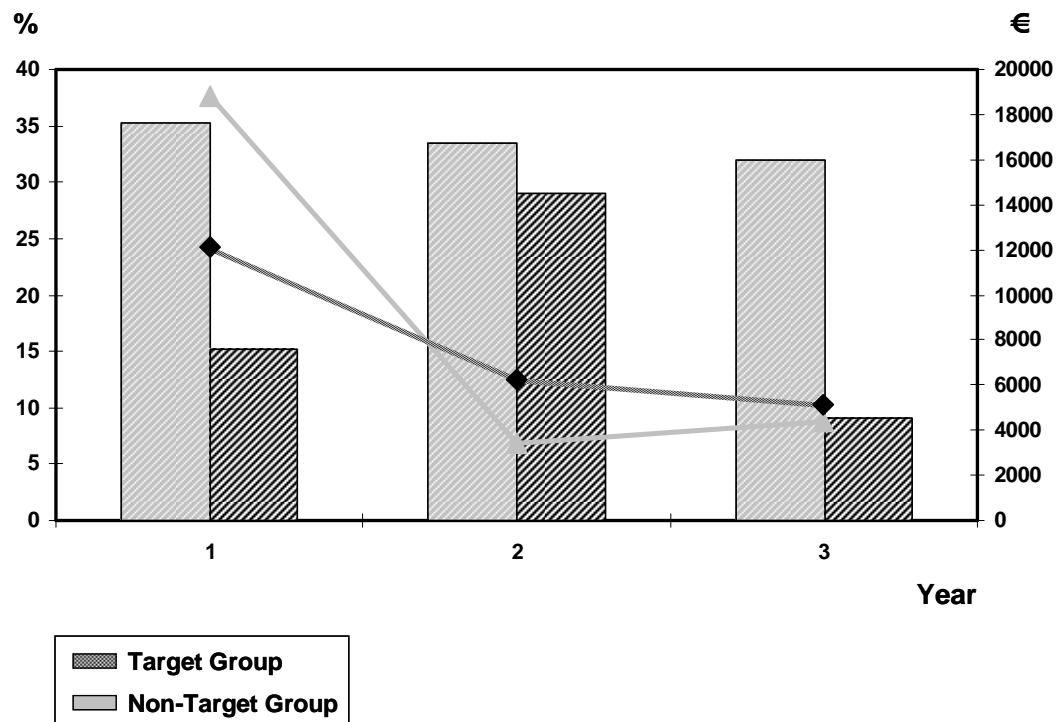


Figure 2: Funding needs (lines, right scale) and equity ratios (bars, left scale) of target group and non-target group members adjusted for outliers with funding needs exceeding €50,000 (N=69).

Table 7: Binary Logit Estimation of determinants of target group membership.

Explanatory Variables	Model A	Model B	Model C
Gender (female=1)	-0.63 (0.64)	-0.97 (0.77)	-2.83 (1.63)*
Age	-0.03 (0.04)	0.02 (0.05)	-0.03 (0.08)
Nationality (foreigner=1)	2.47 (1.54)*	2.44 (1.44)*	5.04 (2.46)**
Education			
(academics=1)	-0.24 (0.67)	-0.07 (0.87)	1.91 (1.78)
(master craftsmen=1)	-3.29 (1.24)***	-3.57 (1.46)**	-6.33 (3.07)**
Preceding period of unemployment (months)	0.01 (0.03)	-0.01 (0.03)	0.08 (0.07)
Line of business			
(retail=1)		2.67 (1.24)**	6.76 (2.64)***
(crafts=1)		0.87 (1.05)	0.72 (1.85)
(lib. professions=1)		-0.09 (0.99)	0.08 (1.28)
Team foundation		2.03 (1.11)*	3.44 (2.15)
Received private loan			2.46 (1.40)*
Received bank loan			-4.85 (1.96)**
Received overdraft			-1.03 (1.66)
Liquidity finance			-2.71 (1.90)
Funding needs in year 2 or 3			2.64 (1.64)*
Constant	1.38 (1.78)	-1.34 (2.26)	0.43 (3.62)
Nagelkerke $R^2$	0.345	0.485	0.754
Cox & Snell $R^2$	0.254	0.357	0.556
Model $Chi^2$	50.28	27.4	18.21
Number of observations	75	75	75

Standard errors in parentheses

\*\*\* significant at a 1% level    \*\* significant at a 5% level    \* significant at a 10% level