

## Banking competition, good or bad? The case of promoting micro and small enterprise finance in Kazakhstan

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**Banking competition, good or bad? The case of promoting micro and small enterprise finance in Kazakhstan**

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Keywords:	development finance, micro loans, competition, financial institution building



# Banking competition, good or bad?

## The case of promoting micro and small enterprise finance in Kazakhstan<sup>χ</sup>

Dorothea Schäfer<sup>\*</sup>, Boriss Siliverstovs<sup>\*</sup> and Eva Terberger<sup>♦</sup>

Competition is claimed to be beneficial in development projects promoting micro and small enterprise finance although there are still doubts as to whether these loans can be developed into a profitable business. Our research sheds new light on the question of how many MSE banking units should optimally be created and supported in a certain region. We employ a unique data set from the European Bank for Reconstruction and Development for Kazakhstan, and investigate which strategy contributes more to the overall success of the program: a strategy of setting up several competing banks or a strategy of establishing regional monopolies.

Keywords: development finance, micro loans, competition, financial institution building

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“Competition is the most important principle on which our strategy is based. As in any other market, effective competition provides incentives for banks to offer market based and demand-oriented financial services. Competition encourages the development of better products and services at lower cost.” (Matthäus-Maier/von Pischke 2004, 1)

## 1 Introduction

Development politics considers creating financial institutions that offer loans to micro and small entrepreneurs (MSE) to be one of the most powerful tools to fight poverty and promote growth (Morduch, 1999; Robinson, 2001). For over a decade, public and private donor agencies have generously provided subsidies to overcome MSEs’ lack of access to finance by founding and promoting microfinance institutions (MFIs) in developing and transition countries. In some urban regions where donors have become active, the microfinance market almost seems crowded now. Not only do financial institutions targeted at MSEs compete with informal money-lenders, but different MFIs offer their service to the same client group (Rhyne and Christen, 1999; Chaudhury and Matin, 2002).

Whether increased competition among financial intermediaries should always be welcomed, however, is far from clear. Politicians, bank practitioners and members of the scientific community claim that competition in banking may have negative impacts on both the solvency of individual banks and – as a consequence - the stability of the banking system as a whole (Allen et al., 2001). If rising competition in financial markets is a subject of controversial discussion in developed countries, the potential virtues and vices of competition in the microfinance markets of developing countries should be even more open to dispute. After all, subsidies were involved to create these markets because existing banks had been unwilling to supply MSE loans on their own

account. Is competition indicating that donors' efforts have been successful, and the market has taken over or – on the contrary – is competition undermining the viability of MSE loan suppliers? Our paper aims to shed new light on the as yet unsolved question of whether competition is good or bad in microfinance markets. We analyze empirically how the degree of competition affects the achievements of development projects promoting MSE loan finance. These projects usually provide subsidies to MFIs for capacity and institution building with a dual objective: The financial institution should be enabled to extend its loan supply for MSE (outreach to the target group) while at the same time aiming at cost coverage and profitability (financial sustainability). The latter provides the guarantee that the new business will survive in the market once the donors' support is phased out.

To our knowledge, no empirical study to date has directly tackled the problem of how competition influences the outreach and the financial situation of MFIs. Due to our unique set of micro data on the credit portfolio as well as on cost and revenues of competing micro loan departments in Kazakhstan, we are able to do this. The data was collected by the Kazakhstan Small Business Programme (KSBP), a microfinance program supported by the European Bank for Reconstruction and Development (EBRD) (Terberger and Lepp, 2004). In contrast to microfinance programs which directly focus on poverty reduction by offering financial services to the very poor, often in the form of group loans, KSBP is designed as a program to develop the Kazakh banking market. Financial institutions in Kazakhstan were supported by KSBP to build up the know-how and the infrastructure to hand out individual loans to micro and small entrepreneurs who had no access to formal sector finance before. The set-up of KSBP and, accordingly, the nature of the data, seem very well suited to our research question as the program offers its service to several competing financial institutions at the same time.

Supporting more than one financial institution is typical of any microfinance program following the downscaling approach as it is known. In distinction to donors' support for a non-profit

organization to become a professional MFI (up-scaling), development aid is used in downscaling to give incentives for commercial banks to move down the market and open up a loan window for MSEs. Typically, in a downscaling project, several partner banks are selected who show serious interest in setting up MSE loan departments. These partner banks receive subsidies to cover the start-up cost of their new business line.<sup>1</sup> When a new MSE loan unit goes into business, its revenues go towards covering its regular costs with the ultimate aim that revenues will exceed costs, the banks will make profits and continue with their new business on their own behalf when the donor withdraws. Accordingly, being a partner bank in such a program means competing with other banks for the same clients if more than one partner bank decide to enter the same local market. For this feature of the program design, downscaling projects serve as a kind of ‘controlled field experiment’ extremely suitable for studying the effects of competition on the dual objective of the microfinance approach.

Therefore, our results provide new insights into the problem of optimal policy design, in particular regarding the question as to whether competition between MSE lenders is favorable for the development of the MSE loan market. By and large, we find that more competition is an impediment to the profitability of MSE departments, but it does not necessarily endanger loan portfolio quality and financial sustainability. The results concerning outreach are ambiguous. We find that the volume disbursed by each banking unit grows with the number of competitors. Also, competition increases the number of loans. However, average loan size goes up with competition, indicating that competition may force banking units towards serving wealthier clients.

The rest of the paper is organized as follows. Section 2 gives a brief review of the related literature. In Section 3 we provide details about the history of the KSBP and develop our research questions. The data set and the testing methods applied are provided in Section 4. Section 5

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<sup>1</sup> The subsidies are normally provided in the form of technical assistance for selecting and training special micro loan officers and establishing the administrative structures and procedures of the new loan departments.

contains the presentation and discussion of results. Section 6 concludes and points to open questions for further research.

## 2 Review of Related Literature

Over the past 15 years, numerous papers have pointed out that – due to the special characteristics of the business - competition in banking might show quite different effects to the efficiency enhancing price and volume effects predicted by standard neoclassical equilibrium theory (Cetorelli, 2001). The papers that analyze competition in the context of relationship lending are closely related to our research question. This lending technique is considered to be the most appropriate for lending to young firms and MSEs, even more so in less developed financial markets with little public information on potential clients and low legal enforcement of creditor rights (Rajan and Zingales, 1998). Just as theory would predict, the relationship lending technique is regularly applied in microfinance projects, including the KSBP.

However, relationship banking requires some monopolistic power on the part of the lender (Rajan, 1992). Monopolistic power secures lenders’ rents on costly information acquisition, it makes it possible to smooth prices between periods and between borrowers of different qualities, and it helps to maintain up the disciplining device of lenders’ threat to cut defaulting borrowers off from further credit. Lenders’ monopolies are contested when competition arises. Information spillover becomes more likely (Chan et al., 1986; Petersen and Rajan, 1995). Borrowers’ switching costs may drop and thereby destroy repayment incentives (Ghosh and Ray, 2001). Price smoothing will become more difficult or even impossible. All in all, competition may undermine relationship lending (Boot, 2000). Accordingly, credit availability to small firms might decrease with rising competition - a hypothesis that was backed by empirical analyzes based on data for the US banking market (Petersen and Rajan, 1995) and subsequently for other countries (Bonaccorsi di Patti and Dell’ Ariccia, 2004). On the other hand, increased competition might enhance the value



of a client relationship, inducing banks to invest more in private information acquisition (Boot and Thakor, 2000; Yafeh and Yosha 2001). Consequently, competition may actually strengthen relationship lending – an argument that also has some empirical support (Berger et al., 2001; Berger, Bonime et al., 2004, Elsas, 2005). The question about the effects of competition on relationship banking remains open (Boot, 2000; Berger, Demirgüç-Kunt et al., 2004, Castañeda 2005).

Besides relationship lending, promotion of MSE finance has the special characteristic of subsidization. Research on competition in this context is rare, not least because competition is a relatively new phenomenon in the microfinance market.<sup>2</sup> The few existing theoretical papers suggest that the potentially destructive effects of competition on relationship lending might be even more prominent if subsidies are involved. Inspired by development projects attempting to extend the supply of micro loans in informal markets by offering cheap formal refinancing sources to money-lenders (interlinkage approach), Hoff and Stiglitz (1998) argue along these lines. They show that economists' intuition which "suggests that a fall in the costs of funds to any group in a money market should lower the cost of credit to all through general equilibrium effects" (Hoff and Stiglitz, 1998: 488) might be misleading if subsidies are available. The argument rests on the new entry attracted by subsidies. New entry can undermine the endogenous disciplining and monitoring technologies a provider of microfinance as a typical relationship lender has to rely on. Similar effects arise if new entry prevents the exploitation of economies of scale, or induces micro clients to borrow from multiple sources. These adverse effects can be so strong that the intended effect of subsidies to provide better access to finance for MSEs may even be reversed. Hoff and

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<sup>2</sup> The first paper to point out that competition has reached the microfinance market and will be important for the future of the microfinance approach is Rhyne and Christen (1999). The paper was presented in 1998 at a conference on Microfinance for practitioners and academics by Elizabeth Rhyne, one of the most prominent consultants in the microfinance industry. The paper is based on a case study of microfinance in Bolivia, which is one of the furthest developed microfinance markets in the world. Donors first supported microfinance in Bolivia at the end of the 1980s, building up several MFIs, among them BancoSol and Caja los Andes which now belong to the flagship institutions of the microfinance movement (Rhyne, 2001). Rhyne and Christen point to the dangers that the entrance of commercial players into the microfinance market carries for the financial sustainability of incumbent non-profit players.



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Stiglitz direct their arguments against the interlinkage approach and even conclude that supporting MFIs in the formal sector is the superior microfinance approach. Nevertheless, their arguments still hold for MFIs as long as the relationship lending approach is applied and subsidies attract new entry. McIntosh and Wydick (2003) argue – much in line with Hoff and Stiglitz - that new entry of MFIs may cause multiple source borrowing leading to clients’ overindebtedness and a deterioration of loan portfolio quality. Furthermore, competition might prevent MFIs from fulfilling their mission of lending to the poor as cross-subsidizing between more wealthy and poorer customers becomes more difficult, and finally, subsidies to non-profit lenders might deter commercial lenders from entering the MSE market.

Papers have been written, however, that claim that adverse effects of competition in the microfinance market can be counteracted. Information sharing between competing lenders (Padilla and Pagano, 2000) is mentioned in a Bolivian case study as a device against strategic borrower default in microfinance markets (Rhyne and Christen, 1999). Navajas et al. (2003) argue, partly inspired by the Bolivian market, that competing MFIs can survive if they concentrate on different customer groups and apply different lending technologies.<sup>3</sup>

Additional insights can be expected from empirical research. However, papers systematically analyzing data on competition and microfinance are rare. Vogelgesang (2003) studies the effects of competition on repayment behavior using a data set on the loan portfolio of Caja los Andes, a prominent Bolivian MFI. She finds that borrowing from multiple sources, customers’ indebtedness and loan defaults have increased with competition. At the same time, however, repayment discipline of customers with unaffected borrowing behavior has increased – a finding that could be explained by the lender’s higher investment in information acquisition. McIntosh et al. (2003) study the effects of competition on micro clients’ behavior in Uganda. Similar to the Bolivian situation, they find more multi source borrowing and a decline of repayment discipline.

<sup>3</sup> Navajas et al. (2003) find empirical evidence backing their model results in the data of two big competing MFIs in Bolivia, BancoSol and Caja los Andes.

However, overall they conclude a positive effect of competition. The negative impact on repayment behavior did not undermine the financial stability of the financial institutions while competition contributed positively to outreach and financial deepening. Chaudhury and Matin (2002) find similar results for the “crowded” microfinance market in Bangladesh. Multiple source borrowing and overindebtedness are “being managed from turning into a major default problem” (Chaudhury and Matin, 2002: 46).

All these empirical studies rely on a data set provided by one institution. Competitive effects are analyzed indirectly by information about the MFI’s clients and – in the case of Uganda – information about the number of local competitors. Navajas et al. (2003) study a data set supplied by two competing MFIs but they concentrate on the question of whether competition induces market segmentation. In contrast, by using microdata on various MSE lenders in Kazakhstan, we are able to gain insights into how competition influences the outreach and the financial situation of MFIs directly.

### 3 Object and Focus of Research

#### 3.1 *KSBP - The EBRD Downscaling Program in Kazakhstan*<sup>4</sup>

Kazakhstan is one of the most advanced CIS states as far as transformation and economic development are concerned. The Government firmly committed itself to following a policy of liberalization, privatization and structural reform as early as 1993/94. For the past few years, positive growth rates, except in the aftermath of the Russian financial crisis, an almost balanced state budget and a successful fight against inflation have characterized the Kazakh macroeconomic situation. In the period of data collection, end of 2003 and beginning of 2004, the economy was on a stable growth path as the yearly growth rates attained almost 10 percent. The productivity of

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<sup>4</sup> See also Terberger and Lepp (2004).

labour increased steadily and the unemployment rate was lowered. Moreover Kaszakh banks' lending increased considerably.<sup>5</sup>

Reforms in the financial sector were very advanced when the KSBP took up its activity in April 1998. Interest rate ceilings and directed policy lending had long been abandoned, a two-tier banking system had been established as early as 1993, and the Government pushed the process of privatization with the last commercial bank being privatized in 2001. Moreover, a well functioning banking supervisory authority had been established with the National Bank of Kazakhstan. A formal loan market for MSEs, however, was almost non-existent.

Accordingly, the KSBP's principal objectives were "(i) to provide finance to MSEs which currently have insufficient access to formal sector finance; (ii) to build up the credit capabilities of Kazakhstan's financial sector so that local banks are able to provide MSEs with access to finance on a permanent basis" (EBRD 1997). These objectives clearly point out the dual mission of the microfinance approach. According to its objectives, the KSBP was not designed as a project to directly fight poverty, but as a project of financial market development. However, an indirect impact on poverty reduction can be expected through creating sustainable access to formal loan finance for MSEs.

The KSBP was provided with a sovereign guaranteed EBRD credit line of 77.6 million USD as a refinancing facility for the MSE business of the partner banks. The conditions, however, made these funds hardly more attractive than funds partner banks could borrow on the market. Some partner banks even had access to cheaper refinancing facilities. The main financial incentive for partner banks to participate in the program was the donors' support of the organizational

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<sup>5</sup> See Indices of main socio-economic indicators, The Agency of Statistics of the Republic of Kazakhstan. Retrieved April 3, 2007, <http://www.stat.kz/index.php?lang=eng&uin=1171952844&chapter=1171220044> and <http://www.expert.ru/tables/kazakhstan/2005/26/document244025/>

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3 implementation of the new business for which the Kazakh Government, the EBRD and several  
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5 other donor organizations provided a considerable sum<sup>6</sup>.  
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8 Five partner banks which could meet the qualification criteria<sup>7</sup> had been selected beforehand,  
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10 among them some of the largest Kazakh commercial banks. Four of these banks were in private  
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12 ownership. The fifth bank was fully privatized in 2001. Two more private banks joined the  
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14 program in November 1998 and September 1999 respectively.  
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17 All partner banks were supported by the KSBP to set up new MSE loan departments under  
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19 standardized starting conditions.<sup>8</sup> KSBP applied a standardized scheme to select and train MSE  
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21 loan officers; the KSBP standardized the organizational structure of the new loan departments<sup>9</sup>;  
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23 and the departments were to offer the same standardized products: short term individual loans in  
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25 local and foreign currency to micro entrepreneurs and small businesses. Micro loans range  
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27 between 500 US\$ and 5,000 US\$, small business loans between 5,000 US\$ and 120,000 US\$  
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31 Six years after the KSBP began, by early 2004, all urban centers in Kazakhstan were covered by  
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33 the program. Partner banks had set up new MSE loan departments in over 120 of their branches  
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35 throughout the country. Their outstanding MSE portfolio grew to over 162 million USD in volume  
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37 and over 35,000 in number, and growth rates were still high. While the average outstanding loan  
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39 amount was about 5,000 US\$, the median client received a loan of about 2,000 US\$. These  
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41 amounts are rather typical for micro-loan programs in transition countries focusing on financial  
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43 sector development.  
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47 In 2003, the KSBP introduced a profit center calculation for the MSE loan departments in each  
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49 partner bank. The first reliable profit center data was released in late 2003. Therefore, there was no  
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54 <sup>6</sup> Among them EBRD, USAID and TACIS.

55 <sup>7</sup> The qualification criteria consisted of a full banking license, approval by the NBK, IAS audit, program compatible  
56 strategy and commitment of bank management to gain experience in MSE business, location of geographical interest  
57 as well as financial stability according to banking regulation standards.

58 <sup>8</sup> The KSBP was implemented under the management of IPC GmbH, Frankfurt, a private consulting firm specialized  
59 on development finance.  
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opportunity to analyze panel data right from the start of the program. Nevertheless, the data which was made available is unique and will allow a cross-sectional analysis of the field experiment on competition and microfinance in Kazakhstan.

**3.2 Program Objective and Competition: Hypotheses**

Our study aims at empirical insights which could enhance the efficiency of development strategies promoting MSE loan finance. Specifically, we are interested in the question of whether (more) competition is conducive to the success of a project. Consequently, we develop our hypotheses according to the dual objective pursued by such projects in general and the KSBP in particular: extending the loan suppliers’ outreach to the target group of MSEs and achieving financial sustainability in the form of cost coverage or even profitability.

A major difficulty in measuring success arises from the fact that development programs involve subsidies. It is plausible to expect that a project will have better results if the subsidy input is increased – even if the paper by Hoff and Stiglitz (1998) warns us that the opposite could be true. Consequently, success should be measured per unit of subsidies. This is impossible, however, for most projects because detailed information assigning subsidies to program activities and objectives is usually missing or not available to the public. The same applies to our data on the KSBP. We do not have data on the exact amount and timing of subsidies, and, even if we did, it would be impossible to assign them to each single loan department separately because most of the KSBP’s service for partner banks is of a central and standardized nature. However, it is precisely this feature that could help to alleviate the problem. Because all MSE departments were founded under the directions of KSBP it seems plausible to assume that all MSE loan departments that are of the same size and the same age have received roughly the same support. Therefore, if we can

<sup>9</sup> The standardization includes the introduction of an IT-based Management Information System (MIS), the MSE lending guidelines and the introduction of an incentive based payment scheme for loan officers, which covered all aspects of their performance from disbursement to portfolio quality.

control for age and size, we should be able to capture significant effects of the competitive situation on the achievements of loan suppliers, even if subsidies are involved.

A second difficulty might arise from the dual objective of the program itself if outreach and financial sustainability are not complementary aims but involve a trade-off. In the extreme, an MSE loan department could attempt to maximize outreach to the smallest customers, even if each new loan would produce further losses. In our context, this problem seems of secondary importance, however. The business policy of each MSE loan unit can plausibly be assumed to be very similar because all of them were set up according to the strategy of the KSBP and all are owned by a private commercial bank. In distinction to non-profit MFIs, for-profit banks are unlikely to give priority to outreach if that will affect profits negatively in the long run.

Marginal positive profits are a necessary precondition for the financial sustainability of the MSE loan business. Without reaching the brink of profitability, commercial loan suppliers can or will not be prepared to continue with the business unless they are provided with further subsidies. Therefore, profits are the most important indicator of financial sustainability. The majority of the theoretical literature predicts a negative effect of more competition on profits. The reasons for this vary, however, and they also have different welfare implications. A decline of profits might be due to the price effect of competition predicted by neoclassical equilibrium analysis, implying a rise in welfare. The opposite might be true if declining profits are caused by competition undermining relationship banking. As some authors claim that competition may even strengthen relationship banking, rising profits cannot be completely ruled out. Therefore, in our first set of empirical tests aimed at capturing the objective of financial sustainability, we ask whether the degree of competition negatively affects the profitability of MSE loan departments and – by employing different cost and revenue indicators – what the likely reasons for this are.

Outreach to the target group has several dimensions in itself. Outreach could be measured in loan volume, it could be measured in client numbers, or it could also be interpreted in the sense of

reaching the target group of low-income clientele. Although the literature argues that competition might lead to a fall in the overall supply of MSE loans, this hypothesis would make little sense in our context where first entries into a new market are promoted. The number of banking units offering MSE loans should have a positive impact on total outreach purely by size effects. It is much less obvious, however, how competition affects the outreach of a single MSE department. More competition might show a positive effect caused by the standard price-volume effect or by clustering and marketing effects. On the other hand, more competition might have an adverse effect on branches' turnover because competition makes relationship lending more difficult and requires more investment in each client relationship. Therefore, in our second set of tests we analyze – again by employing different indicators in an attempt to capture the dimensions of outreach mentioned above – whether the outreach of a single MSE banking unit increases or decreases with the degree of competition.

## 4 Empirical Evidence

### 4.1 *Data Set and Variables*

The data for our analysis comes from several sources. Most importantly, we have cost and revenue information on the MSE loan departments of five out of seven banks participating in the KSBP. The information comprises a cross-sectional survey of the loan departments for the first quarter of 2004. In addition to cost/revenue figures, the survey contains information on the opening and, if applicable, the closing date for every reporting department, the name of the bank that established it, and the city/town<sup>10</sup> where the branch of the bank that introduced the MSE department is located. By the end of 2003, the seven participating banks had established MSE departments in 126 branches. The MSE-business is small compared to the other activities of the participating banks. The MSE-loan portfolio as percentage of total assets of reporting banks ranges from 1.03



% to 3.13 % by the end of 2003. For all banks, their total loan portfolio makes up about two thirds of total assets. For the biggest Kazakh Bank taking part in the program, the MSE-portfolio adds the smallest weight to its loan portfolio which can easily be explained by this bank being the house bank of many big companies. For the smaller Kazakh banks the new MSE business line is more important in volume, and some of them explicitly state that they want to grow especially in this field. As the MSE departments operate as separate profit centers within each branch, we will refer to the MSE departments just as MSE branches or branches in the following sections. Figure 1 shows the number of MSE branches per bank. The cost/revenue information in our data set covers all branches except those 12 branches that belong to the two non-reporting banks (bank types 6 and 7).

In addition to branches, the participating banks set up non-autonomous MSE banking units, known as outlets. Outlets are attached to parent MSE branches to which they report their results. Data on outlets comes from a second data set that includes opening and – should the situation arise - closing dates of all banking units (branches and outlets) for each participating bank sorted by region. Besides the name of the region, the data set names the location each banking unit is operating in as well as the number of citizens as a proxy for the size of the market. Figure 2 illustrates the distribution of the 126 branches across the regions. The names of the 16 regions are taken from the central KSBP statistics.

[Figure 1: here]

[Figure 2: here]

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<sup>10</sup> In the following sections, we use city and town interchangeably.

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**4.2 Independent Variables**

In this section we specify our independent variables. The most important explanatory variables that would allow us to test the hypotheses of interest are those that measure the degree of competition. Typically, the Hirschman-Herfindahl-Index (HHI), based on the branch’s share in the aggregate credit portfolio of MSE-branches in the city, would be employed for such purpose. However, as we miss the data on two participating banks, the data on the total credit portfolios of all MSE branches is not available for all towns. Apart from the lack of data, the HHI could have the disadvantage of being highly subject to the endogeneity problem. This problem arises as the direction of causality between competition and performance of banks or competition and outreach is not instantly clear. Profitability may in particular determine the market share of the bank branches in a city.

Given the data problems with HHI, we introduce the number of competitors (**NumberC**) to proxy the degree of competition. This indicator enables us to take into account the complete magnitude of competition as each distinct bank operating an MSE department in a certain location is taken as one competitor. Moreover, due to the large set up costs of market entry, entry and exit is affected primarily by predetermined factors, e.g. institutional environment or the strategic goals of partner banks and of EBRD (Berger, Demirgüç-Kunt et al., 2004). Therefore the endogeneity problem should be significantly mitigated. However, we use regressions on the Hirschman-Herfindahl-Index (**HHIend**) for a robustness check. The **HHIend**-indicator is calculated on the basis of the available credit portfolios’ values of each branch by the end of the first quarter of 2004.

The number of competitors (**NumberC**) ranges from one to seven (number of partner banks). If one bank owns more than one MSE branch or outlet in a city, all branches and outlets belonging to the same bank are counted as one competitor. In very few cities, some banks are running outlets only. Nevertheless, the bank is present as a competitor and therefore is counted as such. Parent MSE branch and reporting outlets may be located in different towns. This could cause distortions

of cost/revenue figures of parent branches, for instance, if the figures for the parent branch contain the results of an outlet that is a monopolist in its location while the parent branch faces three competitors. To account for such distortions, we would have had to remove parent branches from our data set if parent branch and corresponding outlet face different competitive pressure. Fortunately, however, the sample contains only outlets that face the same competitive environment as their parent branch. Thus, we have kept the information on all parent branches in the sample. The competitive environment of KSBP MSE branches is shown in Figure 3. The MSE branch is a monopolist in seven cities. The full range of all possible competitors is present in two cities. Most frequently, two or three distinct banks operate in the same city.

[Figure 3: here]

In the second set of regressions we use the **HHIend**. Note that this indicator comprises the aggregate credit portfolio of all MSE-branches in only 62 cities/towns. However, those cities in which data on credit portfolios is lacking are the most important locations in terms of high competition. Due to this fact and the observation of often fairly young branches of banks 6 and 7, it may be justified to assume that the missing shares of banks 6 and 7 are not large enough to be decisive for the results.

The degree of competition may also depend on the proximity of clients to the nearest banking unit (Degryse and Ongena, 2005) and on market size. As we lack information on the local distribution of banking units, we have attempted to control for these issues by employing a density measure. The density of MSE banking units (**LDensity**) is defined as the logarithmic transformation of the number of inhabitants of the town divided by the sum of branches and outlets in that location. To control for effects other than that of multiple entries into the local microlending market, we employ several control variables. Following the literature, profitability of the MSE branches is

modeled in terms of cost variables, risk variables and competition variables (see e.g. Barajas, Steiner and Salazar, 1999 and Shaffer, 1993). Total administrative costs per unit of the average outstanding portfolio of the MSE departments (**CostAdmin**) reflects the cost side in terms of a ratio.<sup>11</sup> As refinancing costs are not under the control of the MSE departments but are determined by other business of the mother bank, we do not analyze these costs separately. Risk enters the model through the arrears rate (**Arrears**) defined as the ratio of the observed arrears to the average outstanding portfolio.

In addition, we expect the age of each banking unit to influence its performance due to economies of scale (Altunbas and Molyneux 1996). The portfolio volume of most branches grows over time while certain fixed costs remain constant. Furthermore, experience leads to greater professionalism of the loan officers and thus could have a positive impact on results – to name just a few reasons for the likely impact of the **Age** variable. When a bank branch becomes older, the marginal effect of the time it has been in operation is likely to change. Therefore, we have included the age squared variable (**AgeSqr**) that picks up differentiated marginal effects of the **Age** variable on the relevant dependent variables. The age distribution in the complete sample is shown in Figure 4.

To control for the different structures of administrative costs, the size of each branch defined by the number of loan officers (**Size**) is included in the empirical regressions. Figure 5 shows the size distribution of the sample.<sup>12</sup> Class 1 contains all branches with one or zero loan officers. Class 9 includes all branches that employ more than 8 loan officers. The remaining classes correspond to the respective number of loan officers given on the horizontal axis.

Finally, the bank type dummy variables (**Type1, Type2, ..., Type7**) are included in the empirical regressions in order to capture the specific influences of the mother bank, such as business style,

<sup>11</sup> We also tested the covariate expenses for personnel (**CostPersonnel**) which is less comprehensive than (**CostAdmin**). Results did not change qualitatively. Thus we abstain from reporting these regressions.

<sup>12</sup> The figure does not include the 12 non-reporting branches.

popularity of the brand name, corporate governance or refinancing situation. Similarly, in order to capture economic differences between the 16 regions, we employ a set of the region dummies (**Region1, Region2, ..., Region16**) as we do not have access to region-specific socio-economic information for 2003 and 2004.

[Figure 4: here]

[Figure 5: here]

### 4.3 *Impact of Competition – Dependent Variables and Testing Methods*

The initial cost/revenue file contains data on 126 banking units that were set up before 2004. However, the financial data is missing for all branches of bank types 6 and 7 (12 branches). This leaves us with 114 observations. Since the very young MSE branches (defined as those that are from 1 to 3 months old) need a start-up period in order to build up a loan portfolio, we have also expelled these branches from the estimation sample, which leaves us with 111 branches. Furthermore, we have excluded from the analysis two branches that report zero loan officers. As a result, we are left with 109 observations.

As explained above, in order to analyze the influence of competition on the financial sustainability of the MSE business, we will use the profitability of the MSE branches as the main indicator. The profitability is represented by two indicators, the interest income per unit of the average outstanding MSE portfolio (**InterestIncome**), the rate of return on the average MSE loan portfolio, named return on assets (**RoA**), since the loan portfolio is the only asset which can be exclusively assigned to the micro loan department. **Arrears** are a direct indicator of portfolio quality and can therefore be seen as an indirect indicator of profitability. Thus we also run a regression with arrears as dependent variable.

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For measuring outreach we focus on turnover-related indicators such as the volume and the number of loans disbursed per MSE unit during the first quarter of 2004 (**VolumeDisb**, **NumberDisb**). We chose these flow related measures instead of measures representing the stock of the accumulated portfolio because the competitive situation changed while the stock of loans was being built up. Therefore, measures of the new business in the first quarter of 2004 can be expected to give the best reflection of the actual competitive situation. Furthermore, we employ the average loan size disbursed (**ALoanSize**) as a measure of outreach. As bigger firms are likely to receive higher loans, the latter is likely to reflect the degree to which a branch is dedicated to the target group of micro and small clients. Table 1 presents the summary statistics for the selected indicators.

[Table 1: Summary Statistics  
here]

All of the regressions except the one for arrears have been estimated using the robust estimation method in order to downplay the role of outliers in our dataset. All the computations were produced in STATA using the command RREG which in contrast to the Ordinary Least Squares (OLS) method iteratively re-weights observations such that the better behaved observations get larger weights attached.

For estimating the impact of competition on the arrears we could not apply the OLS method as most of the banks in our sample (82 out of 109) report no arrears at all. In order to account for the presence of the zero values in the dependent variable we estimated the parameters of the model using the Tobit regression. For the sake of comparison, we also report the results of the Probit regression which assesses the impact of competition on the likelihood that a particular bank has

arrears. For the dependent variable in the Probit regression we use the constructed indicator variable that takes the value of one when a bank has arrears and the value of zero otherwise.

## 5 Presentation and Discussion of Results

Tables 2 and 3 present the estimation results on the link between competition and measures of profitability and outreach. The first regression indicates that the number of competitors decreases the gross interest rate (**InterestIncome**) that an MSE branch earns on the average portfolio. The coefficient of **NumberC** is negative and highly significant while none of the control variables show a significant effect. As shown in Table 4, one standard deviation of **NumberC** decreases the **InterestIncome** by -0.312 standard deviations. We obtain basically the same insights by using HHI for the complete sample (Table 3). One standard deviation of **HHIend** increases the standard deviation of the dependent variable by 0.248.

[Table 2: Results

here]

[Table 3: Results

here]

When the return on the average outstanding portfolio **RoA** is regressed on **NumberC**, the number of competing banks has a negative impact on **RoA** with significance at the 1% level. The HHI shows the corresponding positive sign. The coefficient of **Ldensity** is positive and significant. This finding may reflect that clustering and/or spillover effects play a role for profitability. We have also tested smaller models and an alternative cost variable. It turned out that the significance



level is stable across different specifications. The comprehensive cost variable **CostAdmin** affects the **RoA** negatively and significant, which is in line with expectations.

In sum, our hypothesis that competition has a negative effect on profits is confirmed by the data. The magnitude of the impact of the competition, expressed in standard deviations, is given in Table 4. As most of the theoretical literature suggests, profitability, measured in rates of return on scarce financial and human resources, is linked negatively to local competition for microlending branches in Kazakhstan. The finding is consistent with an empirical result developed in Chang et. al. (1997) for the banking market of New York City. They conclude that profits decrease if banks follow other banks' branches. As mentioned above, declining rates of return do not endanger financial sustainability per se, however. The donor community might even welcome such a development if profits are still high enough to keep the business attractive – a discussion that is resumed later.

[Table 4: Results  
here]

What we can already conclude, however, is that the negative effect of competition on return measures cannot be attributed to a decline in repayment discipline (see Table 5).<sup>13</sup> Although most theoretical literature predicts that competition will undermine disciplining devices of relationship lending, we do not find any evidence that the quality of the portfolio is affected. Tobit and Probit models yield almost the same results. In both cases the specifications fail to reveal a significant impact of **NumberC (HHIend)** on the arrears. This result is in contrast to Chaudhury and Matin (2001), McIntosh et. al (2003), and Vogelgesang (2003) but is consistent with Park et. al. (2002) where it is argued that competition induces financial institutions to exert greater screening and enforcement effort.

[Table 5: Results

<sup>13</sup> IKhide (2003) showed that a higher perceived risk on the bank's side can cause a credit crunch in developing countries.

here]

When interpreting our results, it needs to be kept in mind that all of the MSE departments are still under the influence of the central consulting service provided by the KSBP. The standardized screening and monitoring technique implemented by the KSBP is a very restrictive one that implies risking rejecting a loan application from a client that might perform well rather than risking a default. Therefore, the rates of arrears and the loan write-offs have always remained extremely low in almost all of the MSE departments, no matter how fast their loan portfolios were growing (Terberger and Lepp, 2004).

Turning to our results on outreach, the regression results are again quite clear. The variable **VolumeDisb** measures the gross increase in the size of the portfolio of an MSE unit in Quarter 1 of 2004. The competition coefficients are highly significant with a positive sign in the case of **NumberC** and a negative one with **HHIend**. One standard deviation change in the number of competitors (in the Hirschman-Herfindahl Index) increases (decreases) the volume disbursed by 0.28 (-0.25) standard deviations (see Table 4 for the economic impact on the outreach variables). This implies that the disbursement of loans increases in volume if local competition intensifies. As expected, the **Size** of the branch measured in the number of loan officers is highly significant, and also **Age** is highly significant, the sign of the coefficient also being positive. Presumably, older branches are capable of disbursing higher loan volumes because they have more experienced loan officers and more established customers who apply for bigger loans subsequent to repaying their first one. We also find a significant positive impact of increased competition on the number of loans disbursed (**NumberDisb**). However, local competition affects the average size of disbursed loans (**ALoanSize**) significantly an effect that holds again with respect to both indicators of competition. Thus, if competition increases in the local market, the MSE branches provide clients with bigger loans on average. Interestingly the indicator for the density of MSE banking units in

the city (**Ldensity**), has also a positive influence on **NumberDisb** which may reflect improved reachability for clients. The effect on **ALoanSize** is negative, but significance depends on the specification.

In sum, our analysis of outreach and competition shows mixed results. Competition goes hand in hand with an increase of the branches' activity in terms of the volume of loans granted. This could be attributable to the standard price/volume effect of competition and clustering effects in MSE lending which is an innovative business for banks in Kazakhstan. Branches might learn from their competitors and be motivated by their presence. Furthermore, the pure fact that several banks in the same location advertize MSE loans may give a boost to potential clients' knowledge and trust, increasing the pool of sound loan applications. These would be exactly the outreach effects donors hope for when they make the promotion of competition an integral part of their strategy.

The volume effect of competition is obviously not accompanied by a comparable rise in numbers of loans as we find an increase in the average size of loans. This result would probably not be appreciated by donors who place high priority on lending to micro firms and a low-income group. Thus, the impact of competition on outreach is ambiguous. On the one hand, competition increases turnover-related indicators but, on the other hand, bigger single loan amounts suggest that competition shifts the business model towards bigger clients. Due to economies of scale, bigger loans are cheaper for the branch. Our results might indicate that branches respond to increased competitive pressure with bigger loans as an attempt to compensate for decreasing margins.

When evaluating this trade-off that shows up in the different outreach dimensions, the objectives of the KSBP should be borne in mind. Explicitly, the KSBP was designed as a program of financial market development and not as a program to directly fight poverty. Therefore, a trend to move up the market probably induced by competition should not outweigh the positive impact of competition on the supply of MSE loans in terms of volume, as long as these loans serve clients

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3 who have viable investments and had no access to finance previously. On the contrary, granting  
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5 larger, more profitable loans might keep up the feasibility to cross-subsidize the service for  
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7 smaller clients. Whether the partner banks of the KSBP will be willing to do this, once donors  
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9 have withdrawn, is a question beyond the scope of this paper.  
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13 However, without its financial sustainability, MSE lending will not be supplied in the Kazakh  
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15 financial market on a permanent basis. For a private commercial bank as a for-profit player,  
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17 financial sustainability is achieved if the scarce resources the bank is devoting to the MSE loan  
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19 business earn the same (risk adjusted) rate of return that these resources could generate in any  
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21 alternative business opportunity. Our results on profitability indicate that the rates of return are  
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23 influenced negatively by competition. The question arises whether the rates are still sufficiently  
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25 high to keep the business attractive, despite competition.  
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29 A study on the Kazakh banking sector by the IMF and Worldbank (2004) reports declining  
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31 interest rates on loans as well as declining margins due to increased competition. Compared to the  
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33 MSE business, however, the interest rate income on loans reported in this study is considerably  
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35 lower than the average interest rate income on the MSE portfolio of KSBP banks. For 2003 the  
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37 study reports an interest rate received on loans of 13.05% on average, and of 12.47% for the three  
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39 largest banks. According to our data set, the MSE portfolio generates an interest income on  
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41 average portfolio volume of almost 5.5% in the first quarter of 2004 (see Table 1). Accordingly,  
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43 the interest rate received per annum should be well over 20%. On the one hand, the relatively high  
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45 gross interest income of the MSE portfolio could be influenced positively by the excellent  
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47 portfolio quality. This conjecture is supported by the high rate of loan loss provisions of Kazakh  
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49 banks. According to the report, provisions amount to 4.88% of deposits on average and 5.37% for  
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51 the three largest banks in 2003. On the other hand, MSE loan rates are usually higher than the  
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53 rates of loans to medium and large enterprises to cover the higher administrative costs per unit.  
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55 However, these additional costs are more than covered by the additional interest rate income, as  
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the return on the MSE portfolio indicates. The mean return on the average outstanding portfolios amounts to over 2.7% in the first quarter of 2004 (see Table 1). This exceeds the return on total assets of Kazakh banks for the whole year of 2003, which is reported as 1.98% on average and as 1.84% for the three largest banks. We have to take into consideration, however, that the total balance sheet of a bank does also contain unproductive assets, while the only asset assigned to our MSE departments is the productive loan portfolio. Furthermore, no overheads, for example, some of head office costs, are assigned to the MSE departments when their return is calculated. Nevertheless, the MSE business on average seems to have not only passed the line of full financial sustainability, but is contributing to the banks' profits.<sup>14</sup> In the case of Kazakhstan, it seems justified to conclude: On average, competition shows a negative effect on profitability without endangering the financial sustainability of the MSE business.

However, the downscaling approach is applied in other countries where the preconditions for establishing a financially sustainable MSE business might be less favorable than in Kazakhstan. In such contexts, competition might actually have adverse effects on programs promoting MSE finance. Furthermore, even in Kazakhstan, competition might have slowed down the process of reaching the brink of cost coverage, causing more subsidies to be spent than would have been necessary to develop the MSE loan market with less partner banks.

## 6 Conclusions

Based on a unique data set comprising cost and revenue figures of competing MSE banking units in Kazakhstan, we analyze the influence of competition on the success of an EBRD development project promoting MSE loan finance in the Kazakh commercial banking market. The main objectives of any program promoting MSE finance are twofold: MSE lending should be established as a viable business whose survival in the market is not dependent on further subsidies

<sup>14</sup> It has to be mentioned, however, that there are rather big differences between the various MSE departments. The least profitable department contained in Table 1 reports a return on average portfolio of just 0.15% for the first quarter

(financial sustainability) and the outreach to the target group of micro and small enterprise should be maximized.

As the relationship lending technology is applied in MSE lending and its efficiency can be adversely affected by competition, we are surprised to find that competition, measured by the number of competing banks in a location, and lending activity are positively correlated in Kazakhstan without undermining repayment discipline. The outreach, measured by the volume of new loans disbursed, increases with competition while arrears are not affected. The volume increase is accompanied by an increase in the number of loans. However, the average single loan amount increases with competition, hinting at banks moving up the market. Furthermore, our results show a negative link between the degree of competition and the profitability of MSE business, measured as the rate of return on the loan portfolio. Although for Kazakhstan it is not likely that competition has been a serious impediment to the financial sustainability of MSE business, it cannot be ruled out that competition in MSE lending may endanger the survival of new business in a market under less favorable conditions. Future research dedicated to cross-country studies on the effect of competition in developing banking markets promises to give further insights. Even in Kazakhstan it is not unlikely that the MSE loan market could have been developed with less subsidies if MSE loans had been offered by fewer competitors. For this conclusion to be less speculative, however, further research based on detailed data on achievements of programs and subsidies is needed.

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of 2004. An analysis of why profitability varies is beyond the scope of this study.

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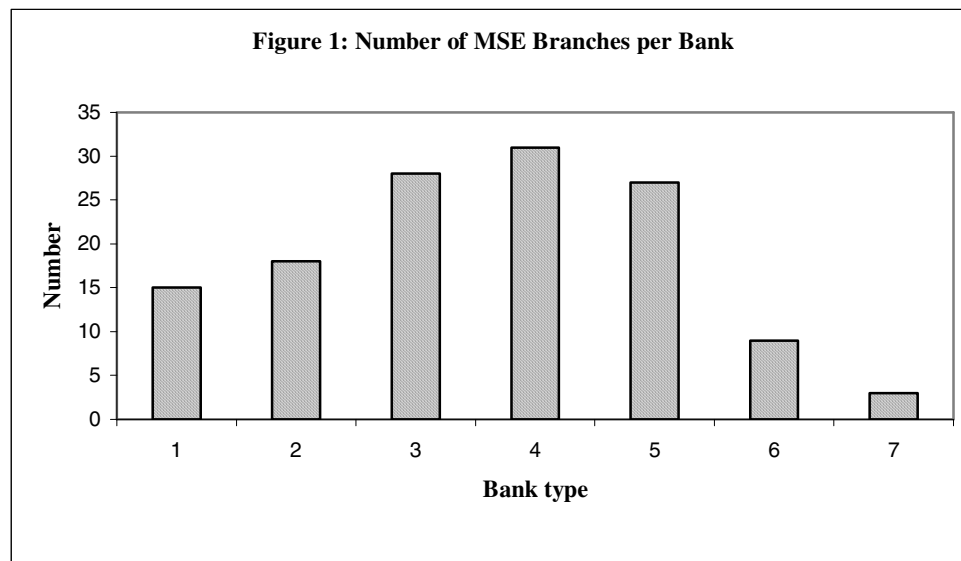
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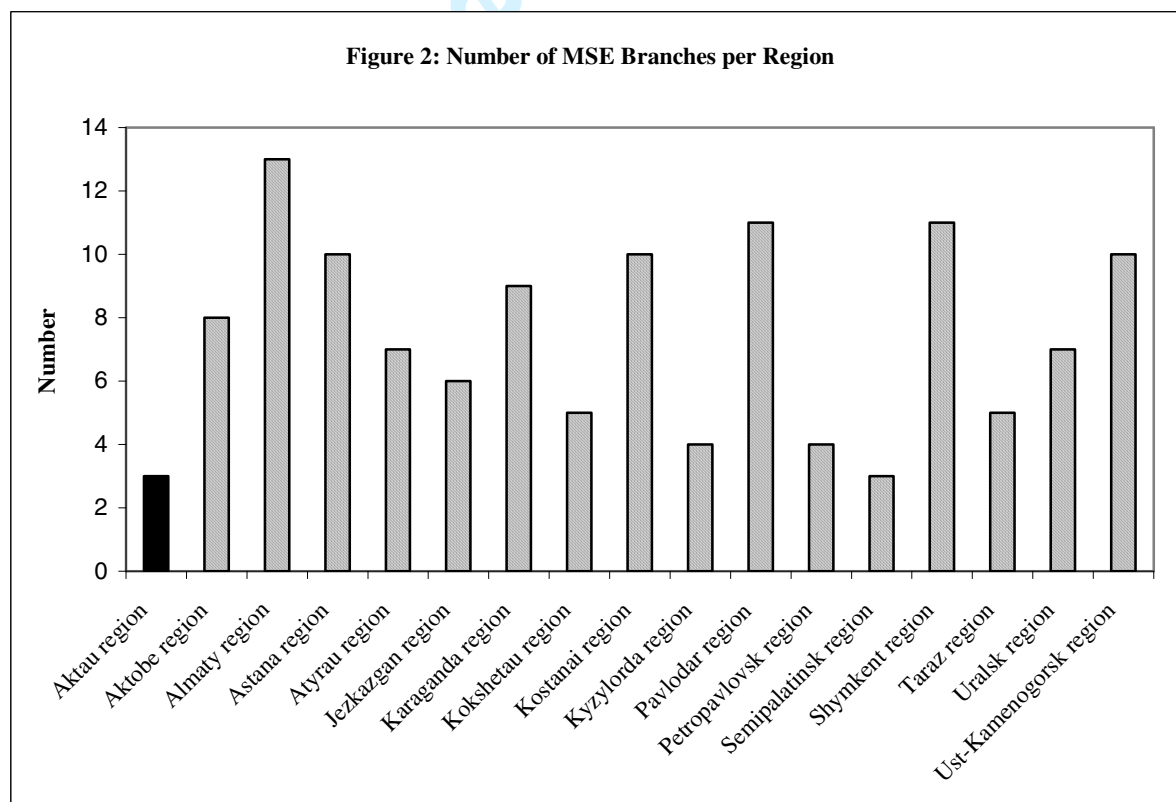
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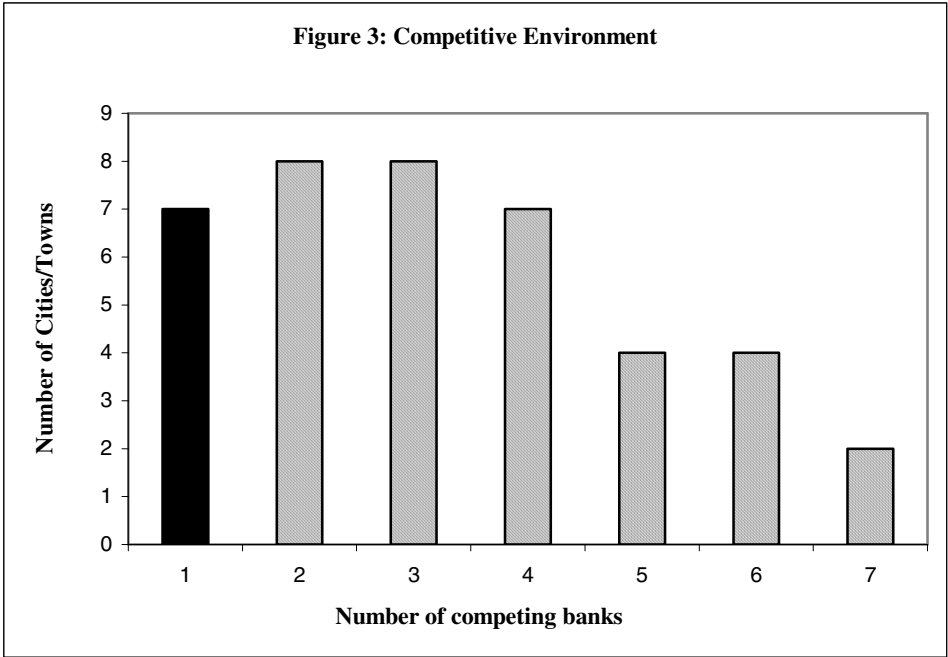
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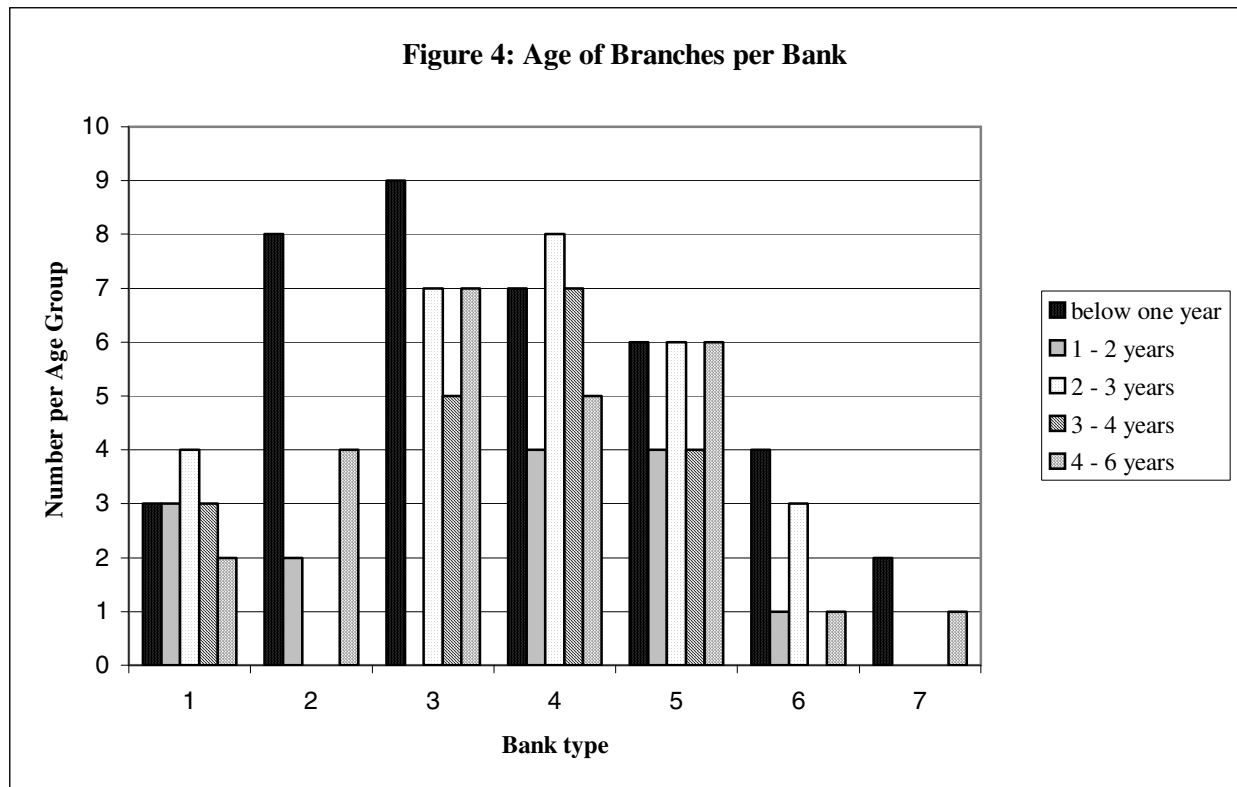
Source: EBRD, Authors' own calculation



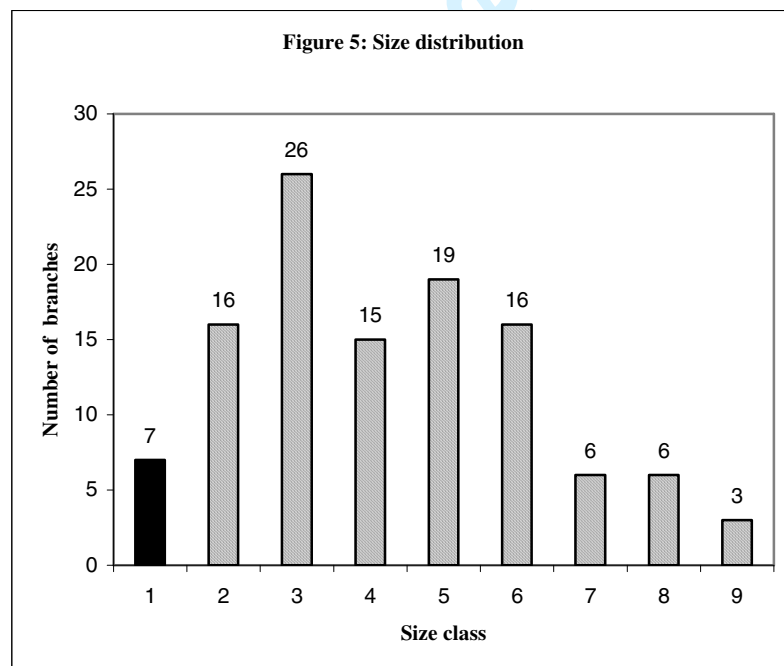
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For Peer Review

Table 1: Normality tests and descriptive statistics

	Observations	Mean	Std.Devn.	Skewness	Excess Kurtosis	Min	Max	Normality test: Chi <sup>2</sup> (2) =
<b>Interest Income*</b>	109	5,446	0,847	0,583	4,829	2,125	9,403	49.760 [0.0000]**
<b>CostAdmin*</b>	109	0,857	0,525	1,770	4,501	0,000	3,368	57.347 [0.0000]**
<b>RoA*</b>	109	2,705	1,107	-0,564	2,859	-1,617	6,692	23.049 [0.0000]**
<b>Arrears*</b>	109	0,088	0,325	6,364	46,879	0,000	2,841	1606.2 [0.0000]**
<b>VolumeDisb</b>	109	499020	495670	2,789	9,502	28987	3026400	217.40 [0.0000]**
<b>NumberDisb</b>	109	91,68	60,59	1,70	3,01	18,00	329,00	86.047 [0.0000]**
<b>ALoanSize</b>	109	5334,500	3141,600	1,385	1,828	1407,500	16427	55.312 [0.0000]**
<b>NumberC</b>	109	4,339	1,783	-0,198	-1,119	1,000	7,000	11.541 [0.0031]**
<b>HHLend</b>	109	0,381	0,215	1,571	1,658	0,208	1,000	118.01 [0.0000]**

\* The variables are expressed as a ratio of the average outstanding portfolio, multiplied by 100.

**Table 2: Results for Number of Competitors (NumC) (Robust)**

Model	Profitability Indicators		Outreach Indicators		
	InterestIncome	RoA	VolumeDisb	NumberDisb	ALoanSize
Age	-0.0075 (0.0139)	0.0005 (0.0173)	0.0331*** (0.0078)	0.0118 (0.0091)	0.0160* (0.0084)
Agesqr	-0.0000 (0.0002)	-0.0001 (0.0002)	-0.0004*** (0.0001)	-0.0002* (0.0001)	-0.0001 (0.0001)
Ldensity	0.0972 (0.1519)	0.3730** (0.1817)	0.1558* (0.0917)	0.3576*** (0.1126)	-0.1127 (0.1085)
Size	0.0104 (0.0357)	0.0290 (0.0419)	0.1844*** (0.0184)	0.1835*** (0.0223)	-0.0170 (0.0221)
Arrears	0.1592 (0.1802)	-0.0873 (0.2214)	0.2272** (0.0989)	0.0223 (0.1168)	0.1565 (0.1082)
CostAdmin	0.0331 (0.1540)	-1.0547*** (0.1998)	-0.3751*** (0.0832)	-0.3257*** (0.0976)	-0.1749* (0.0903)
NumberC	-0.1482*** (0.0410)	-0.1742*** (0.0512)	0.1365*** (0.0223)	0.0602** (0.0246)	0.1217*** (0.0244)
$R^2$	.33	.48	.87	.66	.65
$N$	109	109	109	109	109

Notes: Every regression includes an intercept, bank type and region dummy variables (not shown).

\*\*\*, \*\*, \* - indicate the significance level of 1%, 5%, and 10% percents.

**Table 3: Results for the Herfindahl Index (HHlend) (Robust)**

Model	Profitability Indicators		Outreach Indicators		
	InterestIncome	RoA	VolumeDisb	NumberDisb	ALoanSize
Age	-0.0065 (0.0139)	-0.0164 (0.0162)	0.0258*** (0.0080)	0.0126 (0.0089)	0.0156* (0.0085)
Agesqr	-0.0000 (0.0002)	0.0001 (0.0002)	-0.0003*** (0.0001)	-0.0002** (0.0001)	-0.0001 (0.0001)
Ldensity	0.1488 (0.1479)	0.3553** (0.1727)	0.1114 (0.0926)	0.3445*** (0.1109)	-0.2559** (0.1074)
Size	0.0077 (0.0351)	0.0366 (0.0409)	0.1963*** (0.0191)	0.1826*** (0.0221)	-0.0122 (0.0227)
Arrears	0.1455 (0.1808)	-0.1742 (0.2120)	0.2306** (0.1051)	0.0116 (0.1145)	0.2188* (0.1113)
CostAdmin	0.0729 (0.1507)	-1.1284*** (0.1843)	-0.4779*** (0.0861)	-0.3201*** (0.0954)	-0.1868** (0.0916)
HHlend	0.9745*** (0.3018)	1.1480*** (0.3551)	-0.9967*** (0.1749)	-0.5426*** (0.1985)	-0.8574*** (0.1901)
$R^2$	0.30	.50	.86	.68	.62
$N$	109	109	109	109	109

Notes: Every regression includes an intercept, bank type and region dummy variables (not shown).

\*\*\*, \*\*, \* - indicate the significance level of 1%, 5%, and 10% percents.

Table 4: Economic impact of NumC and HHlend (expressed in Standard Deviations)

		Dependent variable					
Row			InterestIncome	RoA	VolumeDisb	NumberDisb	ALoanSize
1	NumberC	Coef.	-0,148	-0,174	0,137	0,060	0,122
2	NumberC	St.dev.	1,783	1,783	1,783	1,783	1,783
3	Product (row 2*row 3)		-0,264	-0,311	0,243	0,107	0,217
4	Variable.	St.dev.	0,847	1,107	0,869	0,622	0,557
5	Ratio (row 3/row 4)		<b>-0,312</b>	<b>-0,281</b>	<b>0,280</b>	<b>0,173</b>	<b>0,389</b>

		Dependent variable					
Row			InterestIncome	RoA	VolumeDisb	NumberDisb	ALoanSize
1	HHlend	Coef.	0,975	1,148	-0,997	-0,543	-0,857
2	HHlend	St.dev.	0,215	0,215	0,215	0,215	0,215
3	Product (row 2*row 3)		0,210	0,247	-0,215	-0,117	-0,185
4	Variable.	St.dev.	0,847	1,107	0,869	0,622	0,557
5	Ratio (row 3/row 4)		<b>0,248</b>	<b>0,223</b>	<b>-0,247</b>	<b>-0,188</b>	<b>-0,331</b>

Notes: Economic impact is measured as the ratio of the values reported in the row 'Product' to the standard deviation of the respective dependent variable.

Table 5: Arrears

Model	Tobit		Probit	
	NumC	HHlend	NumC	HHlend
Age	0.0720** (0.0361)	0.0733** (0.0361)	0.0710* (0.0396)	0.0722* (0.0398)
Agesqr	-0.0010** (0.0005)	-0.0010** (0.0005)	-0.0010* (0.0005)	-0.0010* (0.0005)
Ldensity	-0.8047* (0.4613)	-0.8369* (0.4679)	-0,800 (0.4929)	-0.8384* (0.5035)
Size	0.2300*** (0.0836)	0.2184*** (0.0820)	0.2884*** (0.1000)	0.2753*** (0.0977)
CostAdmin	-0.2102 (0.4375)	-0.2410 (0.4355)	-0.2114 (0.4798)	-0.2570 (0.4830)
NumberC	0.0076 (0.0950)		-0.0034 (0.1046)	
HHlend		-0.4630 (0.7772)		-0.4506 (0.8600)
$R^2$	0.22	0.22	0.29	0.30
N	109	109	109	109

Notes: Every regression includes an intercept, bank type and region dummy variables (not shown).

\*\*\*, \*\*, \* - indicate the significance level of 1%, 5%, and 10% percents.