

Access to versus Use of Loans: What are the True Determinants of Access?

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Abstract: Access to finance is a prerequisite for economic development. Existing studies measure access by the use of finance. We develop a direct measurement for access to finance, using data from the Business Environment and Enterprise Performance Survey 2005 data. Thereby we determine whether a firm without a loan is indeed credit-constrained or merely does not have demand for external finance and control for potential selection bias. We show considerable differences between the determinants of access and the determinants of use. This implies the conclusion that analyzing information on the use of finance is not sufficient to identify financially constrained firms.

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1. Introduction

It is a well-established fact that access to finance is a major determinant of economic growth (Rajan and Zingales, 1998; Beck, Levine, and Loayza, 2000).¹ In the current financial crisis, financially constrained firms do not invest (Campello, Graham, Harvey, 2009). Therefore, access to finance, which has been one of the core topics in development for quite some time (see, for instance, Claessens, 2006; World Bank, 2008), has emerged on the agenda of nearly all governments. The important policy question is: what measures must be taken to foster access to finance?

A prerequisite to answering this question is to know which factors determine access to finance. However, in reality it is difficult to measure access to finance. In many studies, the use of finance is taken as a proxy for access to finance. This approach, however, neglects the fact that firms that do not use loans can be firms that either do not have access (and were denied loans) or firms that do not have the need for a loan, rather than suffer from a lack of access. For the purpose of analyzing access to finance only the first group is relevant, i.e. those that do not get a loan despite having demand. This implies that studying the factors affecting access to finance by analyzing the use of loans may be misleading.

In contrast to the existing literature we directly measure access and do not proxy for it. Our analysis uses cross-section data on firm-level from the Business Environment and Enterprise Performance Survey (BEEPS), which was conducted in 2005 among 9655 firms in 27 countries in Europe and Central Asia. This data set provides a unique source of information because firms were not only asked whether they had a bank loan or not, but also for reasons why the firm did not have any loans. The reasons were either that it did not have access or that it did not have the demand for one (which is the case for about one third of the total population of firms in our sample). Our measure of access takes into account whether a firm that needs a loan is successful in obtaining one. Thus, firms that do not need a loan are not lumped together with firms that are denied access. Thereby, we

¹ For developing countries, there are several studies that use either policy changes or controlled experiments to estimate the effect of credit constraints on firm performance (for a survey, see Beck and Demirguc-Kunt, 2008). Karlan and Murdoch (2009) provide a comprehensive overview on the topic in the context of development economics.

use more information than all other measures do, which allows us to study the true determinants of access.

To highlight the differences between the access and the use approach we question whether both methods identify the same determinants as having a significant impact on the probability of being financially constrained. We start by estimating the determinants of use in a probit regression. For access we take two different approaches. Firstly, we restrict our sample to those firms that have demand for loans and perform a probit regression to identify which explanatory variables determine access. Secondly, we use a Heckman selection model to control for the selection into the “demand” group, which might not be random and would therefore bias the estimations. Finally, we compare the significant determinants in the different specifications.

Our empirical analysis shows that there exist major differences in the determinants for use and access both on the firm and on the country-level. First, we show that there exist age groups that are financially restricted, but that are not identified in the use approach. The reason is that these groups have a higher loan demand and therefore the use approach cannot identify financially constrained firms. Second, we show that approximating access by the use of finance can also be misleading for particular firms, e.g. foreign-owned companies. They seem to be restricted in the use approach, although having better access to finance. The Heckman selection model shows that this result is due to the lower demand for loans by foreign-owned firms. Third, the most substantial differences appear for the firms’ sector. Despite controlling for a wide range of determinants, firms from many sectors have a smaller probability of using a loan. The access analysis shows, however, the reduced probability is often due to differences in demand. Finally, we demonstrate that among the country-specific factors, the protection of creditor rights is only significant for explaining access and not use. Moreover, foreign bank presence does not improve access although it increases the use of finance.

Our results show that taking the use of loans as a proxy for access to loans can be misleading in many respects. This finding has important policy implications. In particular, with respect to different sectors we see that some industries have a much lower use of loans simply because they do not need loans. Using the access approach, these sectors significantly do not face more constraints than other sectors. Given the distortions

in financial intermediation caused by the current crisis many firms and sectors demand financial support from the government. If this support was provided in the form of easier access to loans, sector-specific programs will be very inefficient, unless they are based on data that adequately measure access to finance. Therefore, we emphasize how important it is to possess data about access to finance before reforms or other policy measures are undertaken.

In the existing literature, firms' financial situations are evaluated by using balance-sheet data or by surveying the firms. Investigating the balance-sheet data provides information on which sources of finance are actually used and the extent of that use. Balance-sheet data can be used to measure whether a firm is financially constrained, for instance, by studying the sensitivity of investment to cash flows (Fazzari, Hubbard, Petersen, 1988). However, there is a considerable debate about this approach (Kaplan and Zingales, 1997, 2000) just as there is for other approaches, such as Tobin's q. Sometimes information from the annual report indicates that financial constraints exist because firms cannot fulfill covenants. Since reliable balance-sheets are needed, this approach is most appropriate when studying big corporations. For small- and medium enterprises (SMEs) data availability is often an issue. Alternatively, data from surveys can be used. For instance, the World Business Environment Survey (WBES) conducted by the World Bank in many emerging and developing economies considered how problematic access to finance and cost of finance are for the operation and the growth of a firm.

Our paper is related to the literature on access to finance and how it is determined by firm- and country-specific characteristics. In this literature a variety of data sources is used. On the firm-level, most studies include ownership and size as explanatory variables. Interestingly, the results of these determinants are ambiguous. Some studies find that small firms use loans more intensively (Giannetti and Ongena, 2009 using loans/total assets from balance sheets data as dependent variable) while others obtain the opposite result (Beck, Demirgürç-Kunt, and Maksimovic, 2008 using bank loan total finance from survey data and Brown, Jappelli, and Pagano, 2009 using total debt/ assets from survey data). The same is true for ownership. In this area, only Brown, Jappelli, and Pagano (2009) find that state-owned firms use loans more intensively. Beck, Demirgürç-Kunt, and Maksimovic (2005) use survey data where firms assess how much access to

finance is an obstacle for their growth. Interestingly, access to finance is perceived as more difficult by small and state-owned firms (Beck, Demirgüç-Kunt, and Maksimovic., 2005). One explanation for these contradictory results might be that the studies investigate different regions and time periods. Probably even more important is the fact that they use proxies for access to finance that do not fully reveal financial constraints.

On the country-level, the results are less ambiguous. It is generally agreed that better protection of creditor rights increases the use of finance (Giannetti and Ongena, 2009, Beck, Demirgüç-Kunt, and Maksimovic, 2008, Brown, Jappelli, and Pagano, 2009). When investigating the legal provisions made to protect creditor rights, the quality of the legal system and the enforcement of these rights are complements (Safavian and Sharma, 2007). The analysis on the impact of information show that the results may depend on the type of measure for access to finance. When access to finance is measured by a perception index, the existence of information sharing arrangements increases access to finance for all firms. However, if the dependent variable is total debt/ assets, information sharing is beneficial only for small firms and those firms in countries with weak creditor rights (Brown, Jappelli, and Pagano, 2009).

We contribute to the literature on access to loans by creating a direct measure of access and identifying problems in the former approaches. Since we can contrast the factors determining access with those determining use, we can evaluate whether the policy measures discussed so far, which are based on measuring the use of loans, are appropriate to foster access to loans.

The paper is organized as follows. In section 2, we describe our data set and the methodology. The results from the empirical analysis are presented in section 3. In the empirical analysis we discriminate between firm and country-specific determinants of access to finance and control for selection bias. We conclude in section 4.

2. Data and Methodology

We use the Business Environment and Enterprise Performance Survey (BEEPS) collected by the European Bank for Reconstruction and Development (EBRD). The BEEPS intends to assess the environment for private enterprise and business development. We use the survey that was conducted in March and April 2005. It covers

27 countries in Europe and Central Asia. Per country between about 200 and 900 firms were interviewed, depending on the size of the country. We leave out data from Uzbekistan and Tajikistan as information about institutional characteristics of these countries is missing and answers might be distorted for political reasons. We also leave out Turkey because we focus on transition countries. So finally we analyze 6659 firms in 24 countries.

The questionnaire contains information about the general characteristics of the firm and a whole section about its financing. In this section firms are asked about their most recent loan. Table I shows how the answers are distributed. In our sample 56% of all firms currently have a loan, 44% do not have one. If the firm does not currently have a loan, it can provide different reasons for it. About 4 % of the firms were rejected, 94% even have not applied for a loan and for 2% the applications are still pending. In addition, firms which did not apply for a loan were asked for the reasons. Firms could give multiple answers, which can be summarized into two different categories. First, the firm did not apply because it was discouraged due to the following reasons: collateral requirements are too strict, interest rates are too high or informal payments need to be made to obtain a loan. Second, a firm actually did not apply because it does not have demand for loans. This differentiation is essential for the following analysis.

2.1. Dependent Variables

We have two different dependent binary variables, *use* and *access*. The difference between these two dependent variables is depicted in Figure 1.

Use is equal to 1 if a firm has a loan and 0 otherwise. This measure is equivalent to former studies analyzing the use of finance. This method does not differentiate between firms that are financially constrained and firms that actually have no demand for a loan.

To study access to finance and to identify credit constrained firms, only firms with demand for a loan should be examined. Accordingly the binary variable *demand* equals 1 for the following three cases:²

² Ideally, we would like to discriminate firms with demand further into those that are creditworthy and those that are not creditworthy. However, such a differentiation is very difficult to be done in practice. There is one study in which a bank newly entering the market evaluated the creditworthiness of households (Johnson and Murdoch, 2008)

- the firm has a loan [1]
- the firm does not have a loan because its application was turned down [2]
- the firm does not have a loan because it was discouraged from applying[3].

Finally, *demand* is 0 if the firm does not have a loan because it has no demand for a loan and therefore has not applied [4]. The number of firms whose application is still pending is very small and being unclear whether they will get access or not, we do not include them.

To analyze *access* to finance we consider only of those firms which have demand for loans (*demand*=1). Therefore the variable *access* is 1 if the firm has a loan (and by definition has demand). *Access* is 0 if it does not have a loan although it has demand for it; this means that the group consists of discouraged firms and of firms that applied for a loan but have been rejected.

Summarizing, we can say that the measure *use* of finance does not discriminate within the “*use*=0” group between firms that applied for a loan and have been rejected, firms that did not apply for a loan, because they were discouraged, and firms that do not have demand at all. Table II summarizes the descriptive statistics.

2.2. Firm-level explanatory variables

From the policy debate and the existing evidence there are several important firm-specific characteristics that may influence access to finance. These include size, age and ownership of the firm. With respect to *size* different effects interact. On the one hand, the banks' costs for conducting a credit evaluation do not vary a lot with the amount of the loan. Thus, smaller loans are less profitable for banks and therefore banks might be reluctant to lend to small firms. On the other hand, there is a diversification effect by granting many small loans. The dummy variable *small-firm* controls for the size of a firm, it equals 1 if the number of employees is less than 50.

Firm *age* should influence the demand for loans. Depending on the stage of development of a firm, financial needs differ and so do the alternative sources of finance available. For newly founded firms the information asymmetries a creditor faces are most severe. Older firms already have a track record and can (ideally) show that they always repaid on time. To measure the effect of age, we use dummy variables to take account of

young start-up firms (0 – 7 years), transition firms (8-13 years) and pre-transition firms (14 years or more), that were established before 1991.

Firms can try to reduce the information asymmetries the investors face by becoming more *transparent*, for instance, through reporting their balance-sheets according to international accounting standards and having them audited by a renounced auditing company. The variable *transparency* takes the value 0 if a firm does neither use international accounting standards nor external audit, it takes the value 1 if at least one of them is used and the value 2 if both are used.³

In transition countries the *ownership* structure has some special features. After the demise of the socialist system basically all firms were state-owned. Since then many of the firms were privatized with the aim to render them more efficient. From this point of view, they should be better debtors. However, if state-owned firms have a soft budget constraint, they will not fail and therefore the bank does not face a risk financing them. The effect of ownership structure is captured with the dummy variables *private firm*, *privatized-firm* and *state-owned-firm*.⁴ Furthermore we control for the nationality of a firm and include the dummy variable *foreign-firm*, that equals one if the largest shareholder is a foreign company.

Moreover, the chance to get a loan depends on the firm's default risk. We capture it by two more explanatory variables: a dummy whether a firm is profitable or not and a dummy whether it made an investment during the last 36 months. So the dummy variable *profit* is 1 if the firm realized profits in 2003 and 0 otherwise. The dummy variable *investment* equals to 1 if new production technologies were acquired in the last 36 months and 0 otherwise.

Also the *sector* which a firm operates in plays an important role because, depending on the nature of the firm's business, the need for financing might differ substantially. For instance, the size of investments is much higher in manufacturing than in retail. Thus, the *demand* for loans might strongly depend on the firm's sector. However, we expect that

³ The degree of transparency is determined by firms' choices within regulatory limits. However, in the following analysis it is treated as an exogenous variable, referring to robustness checks provided by Brown, Jappelli and Pagano (2009). They control for potential endogeneity using instrumental variables estimations and show that analysis of Cost and Use of Finance using BEEPS data do not change.

⁴ Thus, our basic covariates are similar to those of Brown, Jappelli and Pagano (2009) who use data from an earlier wave (2002) of the BEEPS survey. In this round, however, firms were not asked why they do not have a loan.

access to loans depends on firm-specific rather than sector-specific factors. We control for different sector characteristics, using dummy variables which are equal to 1 if more than 95 percent of the sales of a company comes from this sector.⁵ The sectors are mining and quarrying (sector 1), construction (sector 2), manufacturing (sector 3), transportation, storage and communication (sector 4), wholesale, retail and repairs (sector 5), real estate, renting and business services (sector 6), hotels and restaurants (sector 7). Table III summarizes the firm-level explanatory variables.

2.3. Country-level explanatory variables

The second group of determinants are country-specific factors. In this respect particularly important is the *legal framework*. It shapes the credit contracts that potentially can be designed through two channels. The first channel is the protection of creditor rights as codified in the law. The better creditor rights are protected, the more likely banks are willing to provide loans (see La Porta, Lopez-de-Silanes, Shleifer and Vishny, 1998). The second channel is how well the protection of creditor rights is indeed enforced (Pistor, Raiser and Gelfer, 2000). We capture the first channel through the creditor rights index constructed by Doing Business. It measures the degree to which collateral and bankruptcy laws protect the right of borrowers and lenders and ranges between 1 and 10. A higher score facilitates lending and therefore leads to better access to finance. For the second channel we use the effectiveness of legal institutions as measured by the days it takes to enforce a contract.

Credit markets are subject to substantial problems of asymmetric information which are most severe in emerging markets. *Information sharing* devices such as credit registries are an important mechanism to reduce information asymmetries by providing information on, for instance, whether a firm has defaulted on a loan previously. Thus, their existence should make access easier, in particular, for more opaque firms.⁶ Here we use an index developed by Brown, Jappelli and Pagano (2009). This index measures the presence and structure of public credit registries and private credit bureaus. The value

⁵ The majority of the firms operates in a single sector.

⁶ There is a rich theoretical literature on the effects of information sharing on the behavior of borrowers and ultimately on the credit market (for a survey see Brown, Jappelli and Pagano, 2009). Not in all models information sharing has positive effects on access to credit. The effects depend crucially on the incentive problem studied in the model.

ranges from 1 to 5, the more detailed the information provided are and the longer the registry has existed the higher is the scale.

The effect of *foreign bank presence* on access to finance is controversial. On the one hand, foreign banks bring expertise and capital into the host market which might improve access to finance. On the other hand, it is argued that foreign banks might focus on particularly lucrative projects, that are easily identifiable because they are transparent. But foreign bank entry affects the behavior of domestic banks, they could start lending to more opaque firms (Dell’Ariccia and Marquez, 2004).⁷ We capture the presence of foreign banks by the market share of foreign-owned banks (among all bank assets).

Moreover, we use as explanatory variable the income level measured by the log of the gross national income (*logGNI*), *inflation* measured by the GDP deflator. Table IV summarizes the country-level explanatory variables and states the data sources.

2.4. Methodology

We study whether the use of finance is a good proxy for access to finance i.e. whether the use approach identifies the same determinants of credit constraints as the access approach. Therefore, we perform probit estimations for use and access separately and compare the statistical and economic significant variables.

$$\text{Prob}(\text{Access}_i = 1) = \Phi(\alpha_0 + \alpha_1 X_i + \alpha_2 Y + v_i) \quad (1)$$

$$\text{Prob}(\text{Use}_i = 1) = \Phi(\beta_0 + \beta_1 X_i + \beta_2 Y + w_i) \quad (2)$$

with X_i – vector of covariates for firm i and v_i , w_i – random disturbance for firm i . We also include country dummies Y to control for systematic differences across states. To investigate specific macroeconomic effects we replace the country dummies with country-level explanatory variables in a second step.

For estimating access to finance we want to consider only firms, that indeed need a loan and restrict our sample to those firms with demand for loans (*demand*=1). However through such a restriction valuable information gets lost. Moreover, selection into the sample group “demand for credit” might not be random and unmeasured variables could

⁷ Empirical evidence on the effects of foreign bank entry is mixed. Giannetti and Ongena (2009) find that in Eastern Europe larger firms benefit more from foreign bank presence. Detriagache, Tressel and Gupta (2008) show in a sample with low income countries that financial intermediation decreases in foreign bank penetration. Gormley (2009)’s results on India indicate that, on average, firms are less likely to receive a loan after foreign bank entry.

influence the decision of a firm to demand a loan. This selectivity would bias the coefficients in the *access* estimation. Therefore, we make use of all the available information and control for possible selection bias in a Heckman selection model. We estimate the demand for a loan in a selection equation and access to loans in an outcome equation performing a maximum-likelihood probit model with sample selection. The selection equation is:

$$\text{Prob}(\text{Demand}_i = 1) = \Phi(\gamma_0 + \gamma_1 X_i + \gamma_2 Y + \gamma_3 Z_i + u_i) \quad (3)$$

with X_i – vector of firm specific variables, Y – vector of country specific variables, Z_i – vector of additional firm specific variables and u_i – random disturbance for firm i in the selection equation. And the outcome equation:

$$\text{Prob}(\text{Access}_i = 1) = \Phi(\delta_0 + \delta_1 X_i + \delta_2 Y + e_i) \quad (4)$$

with x_i – vector of covariates for firm i , δ – vector of coefficients and e_i – random disturbance for firm i in the outcome equation.

To specify the demand equation we use the firm-specific determinants age, ownership structure, size and profitability equivalent to the use and access regression and additionally include the variable perception of competition as an exclusion restriction. Competition should influence the demand for loans because with more competition, firms may invest more often in order to improve their position relative to other competitors and therefore need more loans. However, banks should base their decision to grant a loan on harder information, in particular, on figures that are observable in the firm's balance sheet. For the assessment of the competition environment banks, however, mainly use industry ratings that evaluate industries globally and often disregard region- and firm-specific circumstances.⁸ Thus, after controlling for differences on country and sector level, the individual perception of competition should not have a direct impact on a bank's decision to grant loans.⁹

To measure the competitive environment firms were asked what would happen if they raised the prices of their main product line or main line of services by 10 percent in

⁸ This information is taken from a guide of a development bank for firms applying for loans at a commercial bank giving firms advice on how to apply and providing explanations for bank behavior (LfA, 2009).

⁹ Regressing access and use on competition confirms the assumption that conditional on firm specific and macroeconomic characteristics, competition does not affect access to finance although it has a significant influence on the use of finance.

the domestic market. The variable *competition* takes the value 1 if customers would continue to buy the same quantities, 2 if they would buy a slightly reduced quantity, 3 if they would buy a much lower quantity and lastly 4 if many buyers would switch and buy from the competitor instead.

When the correlation between the error terms e_i of the outcome equation and the error terms u_i of the selection equation is zero, probit regression provides unbiased estimates. Otherwise the estimators are biased.

3. Empirical Results: Access versus Use

We first report the results for use because this is what is measured in other papers and thus is our point of reference. Next, we report the results for access. We highlight the differences by comparing the determinants of use and access. We show coefficient estimates because we are interested in the implied direction of the effects. Throughout the paper we use robust standard errors.

3.1. Firm-specific factors

We first investigate the firm-specific factors influencing the **use** of loans (Table V). This is done in a probit regression where we next to firm-specific factors and sector dummies use country dummies to control for differences between the 24 countries in our dataset. The results show that small and state-owned firms are less likely to have loans, but also foreign-owned companies have a lower probability of having a loan. In contrast, more transparent firms are more likely to use loans and so are firms that were profitable in 2003. Age effects are not significant. Moreover, all the sector dummies are negative and significant. Thus, they all use loans less often than those in the basic category, which is mining and quarrying.

Next, we run the same regression with **access** to loans as a dependent variable. With respect to the firm-specific variable we find that small firms and state-owned firms less often have access and that transparent and profitable firms more often have access. With respect to the sector-specific effects, only firms in real estate, renting and business services (sector 6) have less access to loans than in the base sector. In contrast to the use

regression, firms in the age group 0-7 years have a lower probability of having access to finance.

These results already highlight the substantial **differences** in the determinants between both methods. With respect to the firm-specific variable, both approaches show almost the same determinants. However, regarding firm age the use approach does not identify credit constraints faced by young firms and also the results for the sector-specific determinants are fundamentally different. Comparing the results for use of loans and access to loans implies that the demand for loans must differ significantly between sectors. However, given that there is demand banks do not base their decision to grant a loan on the firm's sector – with the exception of real estate, renting and business services (sector 6). For them, it is more difficult to get access.

3.2. Country-specific factors

For the analysis of firm-specific factors we captured differences between countries by country dummies. In order to investigate which determinants on the country-level matter, we replace them by country-specific variables (Table VI and VII). The first result is that in both the use and the access regression the significant firm-specific determinants are nearly the same as above.

For the **use** of loans the parameters for GNI and inflation are not significant. Moreover, measures of the legal environment, protection of creditor rights and the time it takes to enforce a contract are not significant. However, foreign bank presence increases the use of loans. We find that information sharing is positive and significant. We also study whether particular groups of firms profit more strongly, by interacting information sharing with a small firm dummy, an opaque firm dummy (if transparency is smaller than 2) and a dummy for weak protection of creditor rights (if the creditor rights index is smaller than 6). The interaction effect between information sharing and the small firm dummy is insignificant, while the interaction with weak creditor rights is significant and negative. Thus, small firms do not benefit more from information sharing than others. Firms from countries with a weak protection of creditor rights however benefit less from better information sharing. In contrast, the interaction with a dummy for opaque firms is

positive and significant. This positive interaction effect implies that in countries that have information sharing arrangements in place access is easier for opaque firms.

For **access** to loans GNI is insignificant and inflation has a negative impact. Foreign bank presence does not matter for the access to finance. For the legal system, we find a positive coefficient of creditor rights, but the time it takes to enforce contracts is insignificant. Information sharing is positive and significant in all regressions (except when interacted with an opaque firm dummy). Only the interaction effect between information sharing and the opaque dummy is significant and positive meaning that a more information sharing improves the access to finance of opaque firms

Thus, also on the country- level there are some **differences** in the determinants of use and access. Inflation negatively influences access but does not matter for use. In contrast to the results for use, foreign bank presence does not affect access. A better protection of creditor rights improves access but does not matter for use. Information sharing is significant in the use and the access regression. However, the interaction effect with weak creditor rights protection is significant and negative only in the use regression. This result would imply that firm in countries with weak protection of creditor rights and adequate information sharing use loans less often than in countries with better creditor rights. However, since the interaction effect is insignificant in the access regression the lower probability of having a loan (due to weak creditor rights) cannot be explained by constraints of access to finance.

3.3. Heckman Selection Model

The comparison of results for use and access already shows that there are significant differences in their respective determinants. We want to explain these differences more rigorously and control for potential selection bias in a Heckman selection model. The results complement what we find for the comparison for the specifications of use and access.

Table VIII shows the results of the Heckman selection model that controls for selection bias. The Wald test of independent equation rejects the H_0 hypothesis that the correlation between the error terms is zero at a 1 percent significance level. This means that selection is not random and that it is necessary to control for it.

In the **demand** regression, we find that firms in the age group 14+ years have a higher probability of demand than firms in the base group 8 – 13 years. Small firms in terms of employment are less likely to demand a loan. Firms that face more competition and those that invested in a new production technology are also more likely to demand a loan. The firm's profitability is negative and significant in this regression implying that firms that were profitable in 2003 have less likely demand for a loan. The sector dummies are particularly interesting. We see that all sectors except sector 2 (construction) less often have demand for loans than the base sector, mining and quarrying.

On the second stage, for **access** to finance the results for the firm-specific variables are similar to what we obtained before. Here, small and state-owned firms are less likely to have access but transparent firms are more likely. Past profitability significantly alleviates access. However, in contrast to the use approach, foreign-owned companies have a significant better access to finance after controlling for selection into the demand group. The apparent restriction that the use approach identifies for foreign firms is solely a demand effect. Foreign-owned firms have a lower loan demand and therefore seem to be restricted in the use approach. Given that they apply for a loan, they in fact have a higher probability of obtaining a loan. Regarding the firm sector the results are similar. Most of the potential restrictions identified in the use approach are due to differences in demand and are not based on real constraints. In contrast, neither the use nor the access approach (without controlling for the selection) could reveal that firms established before 1991 also face financial constraints (p-value of 0.103). The reason is that this age group has a significant higher loan demand and therefore it is difficult to verify a significant worse access without controlling for demand.

On the country-level, our results show that better protection of creditor rights increases access to loans while better enforcement is insignificant. Moreover, foreign bank presence is not significant. The measure of information sharing is significant in the base regression. The interaction effect of information sharing with opaque firms is positive and significant at the 10.2 percent level, but information sharing itself becomes insignificant implying that only opaque firms benefit from information sharing.

When comparing access in the probit and the Heckman model we do not find substantial differences between the country-specific results. The biggest difference arises

between these two approaches with regards to sector-specific results. While in the one-stage model for access we find significant differences in access to finance between sectors, they almost disappear after controlling for demand. The results of the selection equation suggest that firms in all other sectors (except construction) demand loans less often than in the base sector. Thus, the differences between the access and use approach can be mainly explained by differences in demand.

3.4. Robustness Check

To identify the age effects we varied the age categories and used different time intervals. The result is again, that especially young firms between five and ten years have a significant lower probability of having access to credit. This result even holds after controlling for demand and is stable over almost all specifications, independently of the reference category used.

The sector specific differences in access to loans and demand for loans were measured in comparison to firms operating in mining and quarrying. To avoid a unilateral view, we ran the regressions varying the reference sector. The results hardly differ. Differences in demand lead to varying probabilities of using a loan, but after controlling for demand hardly any sector specific effect remains. Only firms operating in the manufacturing sector seem to be restricted in some specifications.

The demand for external financing, but also the success of a loan application might also depend on the current liquidity situation of a firm. To avoid potentially biased estimators due to omitted variables we include different measures for liquidity. We use the amount of short-term debt (i.e. overdue payments) in utilities, taxes, employees and material input suppliers as a proportion of total annual sales as proxy variables for the liquidity situation of a firm. Except for overdue payments for employees, which have no significant effects on demand and access, for all other measurements a lower liquidity increases the demand for loans. A higher amount of overdue payments in taxes and utilities thereby reduces the probability of access, while a higher accumulation of debt in the supplier relationship improves access. The reasons might be that these overdue payments capture trade credits, which suppliers only grant in a trustful relationship with the firm and therefore they imply a positive signal about the firm's creditworthiness.

Despite these differences, all other estimators remain unchanged when controlling for the liquidity situation of firms.

4. Conclusions

In this paper we investigate whether the use of finance is a good approximation for access to finance and, in particular, whether the factors determining use and access, respectively, are the same. We show that studying the use of finance is a good approximation for analyzing the determinants size, ownership, transparency and profitability of a firm. However, we also find considerable differences for the following three determinants.

First, with respect to the firm-specific effects there are differences in the age effects. We show that firms in the age 0 - 7 and 14+ years are indeed financially constrained without having a lower probability of using loans. For firms in the cohort 14+ years we find that this is due to a more frequent demand which makes the identification of financial restrictions difficult. On the contrary foreign-owned firms seem to be restricted when analyzing the use of access. However, the access approach (after controlling for selection) reveals a lower demand and an even better access to finance than domestic firms. Second, the clearest difference exists for the sector dummies. Here again, the use of loans in a sector is driven by demand and sector-specific effects do not matter for access. Thus, our results show that using the use approach may lead to a misjudgement of the determinants of access to finance. Third, with respect to country-specific variables, we show that better creditor rights improve access. But they do not make the use of loans more likely. For foreign bank presence, the results are reversed. Firms are more likely to have a loan in countries with higher foreign bank presence but it does not improve their access to finance. Information sharing is significant in both regressions. Here an approximation of access to finance may lead to a misjudgment and as a result to inefficient policy measures. Furthermore we show that the selection into the demand group is not random and therefore a direct estimations of access to finance without controlling for the selection may bias the results and does not reveal all channels affecting access to finance.

What does our analysis suggest for governments? With respect to reforms on the country-level improving the protection of creditor rights and implementation of information sharing devices are appropriate measures. These measures are particularly important for developing countries where these institutions are still deficient. What can be done by targeting firm-specific aspects of access? Our most important policy conclusion is probably that information about the use of loans is not enough to identify either the type of firms that should be supported or the reforms that should be undertaken on the country-level. Our results also suggest that sector-specific programs to improve access, such as public guarantees for loans to particular industries, do not reach the really financially constrained firms and are therefore not efficient, at least not in “normal” times.

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APPENDIX

Table I: Descriptive Statistics – Identifying Access to Finance

Does the firm have a loan?	Freq.	Percent
No loan	4794	56.29
Loan	3722	43.71
Total	8516	100
If the firm does not have a loan, what was the reason?		
Firm did not apply for a loan	4487	93.6
Application was turned down	220	4.59
Application for the loan is still pending	87	1.81
Total	4794	100
If the firm did not apply, what were the main reasons?		
Does not need a loan	2936	48.11
Application procedures for bank loans are too burdensome	798	13.08
Collateral requirements for bank loans are too strict	842	13.80
Interest rates are too high	1183	19.38
It is necessary to make informal payments to get bank loans	98	1.61
Did not think it would be approved	141	2.31
Others	105	1.72
Total (multiple answers)	6103	100
If the firm did not apply, what were the main reasons?		
At least one answer is "does not need a loan"	2936	65.43
None of the answers is "does not need a loan"	1551	34.57
Total	4487	100

Table II: Dependent Variables

Different groups of firms	demand	access	Freq.	Percent
Firm has a loan	yes	yes	3722	44.16
Firm does not have a loan, because application turned down	yes	no	220	2.61
Firm does not have a loan, because discouraged from applying	yes	no	1551	18.40
Firm does not have a loan, because no need	no	-	2936	34.83
Total			8429	100
Demand			Freq.	Percent
No			2936	34.83
Yes			5493	65.17
Total			8429	100
Access			Freq.	Percent
No			1771	32.24
Yes			3722	67.76
Total			5493	100

Table III: Firm-Level Explanatory Variables

Country	transition firm	post-transition firm	small firm	privatized firm	state-owned firm	transparency	profit	competition	investment
Albania	0.22	0.72	0.74	0.08	0.09	0.99	0.92	2.50	0.40
Armenia	0.11	0.63	0.78	0.31	0.06	0.71	0.97	2.46	0.53
Azerbaijan	0.08	0.78	0.68	0.07	0.11	0.68	0.99	2.64	0.50
Belarus	0.21	0.62	0.71	0.05	0.12	0.48	0.85	2.45	0.28
Bosnia	0.08	0.62	0.61	0.18	0.10	0.76	0.79	2.55	0.45
Bulgaria	0.30	0.51	0.74	0.14	0.10	0.66	0.78	2.54	0.28
Croatia	0.35	0.38	0.65	0.21	0.11	1.08	0.96	2.57	0.43
Czech Rep.	0.38	0.55	0.76	0.07	0.09	0.41	0.91	2.45	0.23
Estonia	0.37	0.54	0.74	0.12	0.09	1.68	0.89	2.52	0.19
Georgia	0.08	0.64	0.74	0.26	0.12	1.15	0.74	2.61	0.28
Hungary	0.39	0.46	0.72	0.10	0.04	0.88	0.85	2.91	0.15
Kazakhstan	0.14	0.76	0.73	0.19	0.07	0.43	0.87	2.38	0.31
Kyrgyz Rep.	0.14	0.57	0.63	0.36	0.11	0.83	0.78	2.65	0.43
Latvia	0.22	0.65	0.74	0.10	0.11	0.86	0.69	2.31	0.25
Lithuania	0.29	0.53	0.68	0.17	0.13	0.65	0.75	2.79	0.29
Macedonia	0.22	0.53	0.73	0.16	0.09	0.49	0.80	2.66	0.31
Moldova	0.17	0.71	0.65	0.22	0.06	0.23	0.62	2.50	0.38
Poland	0.31	0.42	0.75	0.07	0.06	0.45	0.88	2.83	0.34
Romania	0.36	0.53	0.65	0.11	0.06	0.59	0.83	2.40	0.41
Russia	0.16	0.70	0.67	0.12	0.10	0.48	0.88	2.30	0.31
Serbia	0.25	0.45	0.65	0.13	0.14	0.92	0.79	2.06	0.36
Slovak Rep.	0.36	0.51	0.68	0.06	0.11	0.65	0.87	2.66	0.23
Slovenia	0.39	0.29	0.71	0.19	0.11	0.58	0.74	2.47	0.29
Ukraine	0.18	0.64	0.71	0.15	0.10	0.49	0.83	2.31	0.31

Table IV: Country-Level Explanatory Variables

Country	information sharing	GNI	inflation	foreignbank	creditrights	enforcement days
Albania	0	2580	3.49	92.3	9	390
Armenia	0	1470	3.17	48.7	4	285
Azerbaijan	0	1270	16.14	6.6	7	267
Belarus	0	2760	16.6	16.2	4	225
Bosnia	0	2680	1.4	90.9	4	595
Bulgaria	0.8	3510	3.76	74.5	6	564
Croatia	0	8350	3.19	91.2	5	561
Czech Rep.	0	11150	0.68	84.4	6	820
Estonia	4	9530	6.79	99.4	4	425
Georgia	0	1300	8.27	75.9	5	375
Hungary	3.8	10210	2.01	82.6	6	335
Kazakhstan	3.6	2940	17.87	7.3	5	230
Kyrgyz Rep.	0	450	7.13	73.6	4	177
Latvia	0	6760	10.18	57.9	8	279
Lithuania	4.6	6910	5.77	91.7	4	210
Macedonia	2	2830	3.27	51.3	6	509
Moldova	0	960	9.35	19.6	6	365
Poland	0	7150	2.58	74.3	4	980
Romania	0.6	3830	12.29	59.2	5	537
Russia	0	4470	19.19	8.3	3	281
Serbia	0	2190	15.12	66	3	1028
Slovak Rep.	1.2	8100	2.37	97.3	9	565
Slovenia	2.8	17430	1.47	22.6	6	1350
Ukraine	0	1540	24.66	21.3	8	354

Table V: Results of Probit Regressions (1)

	Use Approach			Access Approach		
	Coef.	Robust Std. Err.	P>z	Coef.	Robust Std. Err.	P>z
age 0-7	-0.041	0.040	0.307	-0.099 *	0.051	0.054
age 14+	0.024	0.043	0.577	-0.046	0.058	0.428
foreign firm	-0.224 ***	0.076	0.003	0.139	0.124	0.260
small firm	-0.509 ***	0.041	0.000	-0.706 ***	0.057	0.000
privatized firm	-0.013	0.053	0.810	0.015	0.072	0.831
state-owned firm	-0.598 ***	0.068	0.000	-0.511 ***	0.095	0.000
transparency	0.206 ***	0.028	0.000	0.299 ***	0.038	0.000
profit	0.218 ***	0.046	0.000	0.417 ***	0.058	0.000
sec_construction	-0.146 **	0.068	0.031	-0.129	0.088	0.143
sec_manufacturing	-0.089 **	0.044	0.041	-0.068	0.056	0.227
sec_transport	-0.172 **	0.079	0.029	-0.077	0.105	0.461
sec_wholesale	-0.182 ***	0.049	0.000	-0.020	0.064	0.755
sec_real estate	-0.545 ***	0.071	0.000	-0.299 ***	0.097	0.002
sec_hotels	-0.484 ***	0.086	0.000	-0.125	0.127	0.327
_cons	0.151	0.149	0.312	0.683 ***	0.197	0.001
Country dummies	yes			yes		
Observation	6629			4412		
Pseudo R-squared	0.088			0.130		

Table VI: Results of Probit Regressions (2)

Use Approach	Robust			Robust			Robust			Robust		
	Coef.	Std. Err.	P>z									
age 0-7	-0.049	0.039	0.210	-0.049	0.039	0.204	-0.048	0.039	0.214	-0.048	0.039	0.214
age 14+	0.023	0.042	0.589	0.020	0.042	0.629	0.024	0.042	0.561	0.015	0.042	0.712
foreign firm	-0.253 ***	0.073	0.001	-0.244 ***	0.073	0.001	-0.254 ***	0.073	0.000	-0.257 ***	0.073	0.000
small firm	-0.500 ***	0.040	0.000	-0.500 ***	0.040	0.000	-0.470 ***	0.046	0.000	-0.501 ***	0.040	0.000
privatized firm	0.052	0.052	0.319	0.049	0.052	0.344	0.050	0.052	0.340	0.057	0.052	0.272
state-owned firm	-0.595 ***	0.067	0.000	-0.597 ***	0.067	0.000	-0.591 ***	0.067	0.000	-0.590 ***	0.067	0.000
transparency	0.193 ***	0.026	0.000	0.216 ***	0.028	0.000	0.194 ***	0.026	0.000	0.191 ***	0.026	0.000
profit	0.155 ***	0.045	0.001	0.156 ***	0.045	0.000	0.154 ***	0.045	0.001	0.158 ***	0.045	0.000
sec_construction	-0.158 **	0.067	0.018	-0.158 **	0.067	0.018	-0.156 **	0.067	0.020	-0.158 **	0.067	0.018
sec_manufacturing	-0.144 ***	0.042	0.001	-0.146 ***	0.042	0.001	-0.143 ***	0.042	0.001	-0.141 ***	0.042	0.001
sec_transport	-0.202 ***	0.078	0.009	-0.201 ***	0.078	0.010	-0.202 ***	0.078	0.009	-0.198 **	0.078	0.011
sec_wholesale	-0.184 ***	0.048	0.000	-0.182 ***	0.048	0.000	-0.184 ***	0.048	0.000	-0.183 ***	0.048	0.000
sec_real estate	-0.520 ***	0.070	0.000	-0.519 ***	0.070	0.000	-0.519 ***	0.070	0.000	-0.517 ***	0.070	0.000
sec_hotels	-0.486 ***	0.086	0.000	-0.488 **	0.086	0.000	-0.482 ***	0.086	0.000	-0.483 ***	0.086	0.000
logGNI	-0.007	0.029	0.799	-0.007	0.029	0.813	-0.008	0.029	0.785	-0.015	0.029	0.604
inflation	-0.002	0.004	0.600	-0.001	0.004	0.774	-0.002	0.004	0.602	0.001	0.004	0.839
foreignbank	0.002 *	0.001	0.057	0.002 **	0.001	0.032	0.002 *	0.001	0.061	0.002 **	0.001	0.023
creditrights	0.015	0.010	0.129	0.013	0.010	0.198	0.015	0.010	0.133	0.008	0.010	0.448
log_enfdays	0.025	0.043	0.561	0.029	0.043	0.508	0.025	0.043	0.562	0.024	0.043	0.580
information sharing	0.055 ***	0.014	0.000	0.002	0.026	0.932	0.079 ***	0.022	0.000	0.081 ***	0.020	0.000
info_opaque				0.063 **	0.027	0.019						
info_small							-0.033	0.023	0.157			
info_weaker										-0.041 *	0.021	0.057
cons	-0.076	0.283	0.787	-0.125	0.285	0.662	-0.092	0.283	0.744	-0.017	0.285	0.951
Observation	6629			6629			6629			6629		
Pseudo R-squared	0.06			0.06			0.06			0.06		

Table VII: Results of Probit Regressions (3)

Access Approach	Robust			Robust			Robust			Robust		
	Coef.	Std. Err.	P>z									
age 0-7	-0.109 **	0.050	0.031	-0.109 **	0.050	0.031	-0.109 **	0.050	0.031	-0.108 **	0.050	0.032
age 14+	-0.057	0.056	0.303	-0.059	0.056	0.291	-0.057	0.056	0.310	-0.059	0.056	0.290
foreign firm	0.091	0.117	0.437	0.104	0.116	0.367	0.090	0.117	0.442	0.090	0.117	0.446
small firm	-0.707 ***	0.056	0.000	-0.707 ***	0.056	0.000	-0.692 ***	0.063	0.000	-0.707 ***	0.056	0.000
privatized firm	0.094	0.071	0.186	0.091	0.071	0.199	0.093	0.071	0.190	0.095	0.071	0.179
state-owned firm	-0.498 ***	0.092	0.000	-0.501 ***	0.092	0.000	-0.496 ***	0.092	0.000	-0.496 ***	0.092	0.000
transparency	0.274 ***	0.035	0.000	0.300 ***	0.037	0.000	0.275 ***	0.035	0.000	0.273 ***	0.035	0.000
profit	0.354 ***	0.056	0.000	0.354 ***	0.056	0.000	0.354 ***	0.056	0.000	0.354 ***	0.056	0.000
sec_construction	-0.162 *	0.087	0.062	-0.162 *	0.087	0.062	-0.161 *	0.087	0.064	-0.162 *	0.087	0.061
sec_manufacturing	-0.130 **	0.054	0.016	-0.133 **	0.054	0.014	-0.130 **	0.054	0.016	-0.129 **	0.054	0.017
sec_transport	-0.124	0.103	0.232	-0.125	0.104	0.227	-0.125	0.103	0.228	-0.123	0.103	0.235
sec_wholesale	-0.016	0.063	0.794	-0.015	0.063	0.814	-0.016	0.063	0.793	-0.016	0.063	0.794
sec_real_estate	-0.253 ***	0.094	0.007	-0.246 ***	0.094	0.009	-0.253 ***	0.094	0.007	-0.253 ***	0.094	0.007
sec_hotels	-0.094	0.126	0.456	-0.097	0.126	0.443	-0.093	0.126	0.462	-0.093	0.126	0.459
logGNI	0.051	0.037	0.159	0.052	0.037	0.155	0.051	0.037	0.162	0.049	0.037	0.182
inflation	-0.009 **	0.004	0.049	-0.008 *	0.004	0.075	-0.009 **	0.004	0.049	-0.008 *	0.005	0.087
foreignbank	0.001	0.001	0.428	0.001	0.001	0.323	0.001	0.001	0.441	0.001	0.001	0.397
creditrights	0.036 ***	0.013	0.005	0.034 **	0.013	0.009	0.036 ***	0.013	0.005	0.035 **	0.014	0.012
log_enfdays	0.049	0.054	0.367	0.052	0.054	0.334	0.049	0.054	0.361	0.048	0.054	0.371
information sharing	0.047 ***	0.018	0.008	-0.023	0.037	0.539	0.060 *	0.032	0.060	0.054 **	0.026	0.041
info_opaque				0.080 **	0.038	0.037						
info_small							-0.016	0.034	0.629			
info_weakcr										-0.011	0.029	0.717
cons	-0.197	0.354	0.578	-0.246	0.356	0.489	-0.208	0.355	0.559	-0.180	0.358	0.615
Observation	4412			4412			4412			4412		
Pseudo R-squared	0.1			0.1			0.1			0.1		

Table VIII: Results of Heckprobit Regressions

Heckman Approach	Robust			Robust			Robust			Robust		
	Coef.	Std. Err.	P>z									
access												
age 0-7	-0.110 **	0.046	0.018	-0.110 **	0.047	0.018	-0.109 **	0.046	0.018	-0.109 **	0.046	0.018
age 14+	-0.083	0.051	0.103	-0.084	0.051	0.102	-0.082	0.051	0.107	-0.086 *	0.051	0.090
foreign firm	0.237 **	0.109	0.030	0.241 **	0.109	0.027	0.238 **	0.109	0.029	0.235 **	0.109	0.031
small firm	-0.548 ***	0.063	0.000	-0.552 ***	0.065	0.000	-0.512 ***	0.067	0.000	-0.545 ***	0.063	0.000
privatized firm	0.073	0.065	0.261	0.072	0.065	0.272	0.071	0.065	0.273	0.076	0.065	0.245
state-owned firm	-0.241 **	0.099	0.015	-0.248 **	0.101	0.014	-0.229 **	0.098	0.019	-0.235 **	0.098	0.017
transparency	0.236 ***	0.033	0.000	0.254 ***	0.035	0.000	0.235 ***	0.032	0.000	0.234 ***	0.033	0.000
profit	0.328 ***	0.052	0.000	0.330 ***	0.053	0.000	0.325 ***	0.052	0.000	0.327 ***	0.052	0.000
sec_construction	-0.096	0.082	0.239	-0.098	0.082	0.230	-0.092	0.081	0.258	-0.096	0.081	0.238
sec_manufacturing	-0.089 *	0.050	0.076	-0.093 *	0.051	0.068	-0.088 *	0.050	0.080	-0.088 *	0.050	0.082
sec_transport	-0.038	0.097	0.695	-0.040	0.098	0.681	-0.039	0.097	0.690	-0.035	0.097	0.715
sec_wholesale	0.062	0.059	0.288	0.062	0.059	0.295	0.064	0.058	0.269	0.063	0.058	0.276
sec_real_estate	0.020	0.095	0.833	0.020	0.096	0.837	0.028	0.093	0.761	0.025	0.094	0.792
sec_hotels	0.130	0.121	0.283	0.124	0.122	0.310	0.138	0.119	0.245	0.135	0.120	0.262
logGNI	0.068 **	0.033	0.041	0.068 **	0.033	0.042	0.067 **	0.033	0.041	0.064 *	0.033	0.056
inflation	-0.009 **	0.004	0.031	-0.008 **	0.004	0.045	-0.009 **	0.004	0.030	-0.008 *	0.004	0.078
foreignbank	0.000	0.001	0.730	0.001	0.001	0.608	0.000	0.001	0.783	0.000	0.001	0.635
creditrights	0.036 ***	0.012	0.002	0.035 ***	0.012	0.004	0.036 ***	0.012	0.002	0.033 ***	0.013	0.009
log_enfdays	0.050	0.049	0.302	0.053	0.049	0.284	0.052	0.049	0.288	0.050	0.049	0.310
information sharing	0.029 *	0.016	0.080	-0.021	0.034	0.537	0.057 *	0.030	0.057	0.042 *	0.024	0.075
info_opaque				0.057	0.035	0.102						
info_small							-0.036	0.031	0.251			
info_weaker										-0.020	0.025	0.430
_cons	-0.110	0.322	0.732	-0.143	0.324	0.658	-0.131	0.321	0.682	-0.076	0.325	0.815
demand												
age 0-7	0.043	0.039	0.267	0.043	0.039	0.267	0.044	0.039	0.264	0.043	0.039	0.267
age 14+	0.090 **	0.042	0.033	0.090 **	0.042	0.033	0.090 **	0.042	0.033	0.090 **	0.042	0.033
foreign firm	-0.290 ***	0.072	0.000	-0.291 ***	0.072	0.000	-0.290 ***	0.072	0.000	-0.290 ***	0.072	0.000
small firm	-0.238 ***	0.040	0.000	-0.239 ***	0.040	0.000	-0.239 ***	0.040	0.000	-0.238 ***	0.040	0.000
privatized firm	0.024	0.053	0.656	0.024	0.053	0.655	0.024	0.053	0.657	0.024	0.053	0.658
state-owned firm	-0.449 ***	0.065	0.000	-0.449 ***	0.065	0.000	-0.448 ***	0.065	0.000	-0.449 ***	0.065	0.000
profit	-0.084 *	0.046	0.064	-0.085 *	0.046	0.064	-0.084 *	0.046	0.064	-0.084 *	0.046	0.064
investment	0.159 ***	0.034	0.000	0.158 ***	0.034	0.000	0.159 ***	0.034	0.000	0.159 ***	0.034	0.000
sec_construction	-0.106	0.069	0.123	-0.106	0.069	0.123	-0.105	0.069	0.125	-0.105	0.069	0.125
sec_manufacturing	-0.074 *	0.043	0.086	-0.074 *	0.043	0.087	-0.074 *	0.043	0.086	-0.074 *	0.043	0.086
sec_transport	-0.170 **	0.078	0.030	-0.170 **	0.078	0.030	-0.169 **	0.078	0.031	-0.169 **	0.078	0.031
sec_wholesale	-0.225 ***	0.048	0.000	-0.225 ***	0.048	0.000	-0.225 ***	0.048	0.000	-0.225 ***	0.048	0.000
sec_real_estate	-0.487 ***	0.067	0.000	-0.488 ***	0.067	0.000	-0.488 ***	0.067	0.000	-0.488 ***	0.067	0.000
sec_hotels	-0.537 ***	0.082	0.000	-0.537 ***	0.083	0.000	-0.537 ***	0.082	0.000	-0.537 ***	0.082	0.000
information sharing	0.035 ***	0.014	0.009	0.035 **	0.014	0.010	0.036 ***	0.014	0.009	0.035 ***	0.014	0.009
logGNI	-0.067 **	0.029	0.020	-0.067 *	0.029	0.020	-0.067 **	0.029	0.020	-0.067 **	0.029	0.020
inflation	0.004	0.003	0.222	0.004	0.003	0.221	0.004	0.003	0.223	0.004	0.003	0.226
foreignbank	0.001	0.001	0.314	0.001	0.001	0.312	0.001	0.001	0.318	0.001	0.001	0.316
creditrights	-0.006	0.010	0.518	-0.006	0.010	0.517	-0.006	0.010	0.521	-0.006	0.010	0.524
log_enfdays	-0.020	0.042	0.635	-0.020	0.042	0.633	-0.020	0.042	0.636	-0.020	0.042	0.631
competition	0.065 ***	0.015	0.000	0.066 ***	0.015	0.000	0.065 ***	0.015	0.000	0.065 ***	0.015	0.000
cons	1.138 ***	0.285	0.000	1.139 ***	0.285	0.000	1.137 ***	0.284	0.000	1.139 ***	0.285	0.000
athrho	-0.950 ***	0.278	0.001	-0.921 ***	0.279	0.001	-0.992 ***	0.274	0.000	-0.975 ***	0.281	0.001
Observation	6659			6659			6659			6659		
Wald chi2	221.89			221.89			225.1			224.7		
Prob > chi2	0.000			0.000			0.000			0.000		

Figure I: Comparison of Access and Use

