Working Paper Series
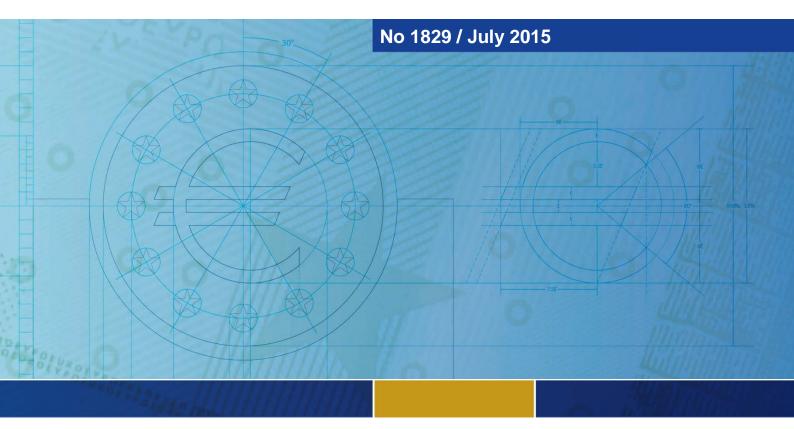
Daniela Maresch LL.M.,
Annalisa Ferrando and Andrea Moro

Creditor protection, judicial enforcement and credit access

Abstract

We investigate the role of the judicial system on whether or not the firms obtain the credit they applied for, by looking at the strength of the creditor protection, the strength of property rights, the time for resolving a dispute, its costs and the number of procedures the plaintiff faces. We use data about 48,590 firms from eleven countries collected via the Survey on the Access to Finance of Enterprises (European Central Bank) and data from the World Bank, the Heritage Foundation and Eurostat. The results suggest that the better the judicial enforcement system is (reduced costs, reduced time, and limited number of procedures) and the higher the creditor protection is (high overall strength of the legal system, high property rights protection), the lower the probability that the firms are credit constrained. Our results are robust to selection bias (Heckman selection) as well as different controls and different estimation techniques. More importantly, we find that these variables have considerable economic impact: the probability to obtain credit is up to 40% higher in countries with a better legal system.

Non Technical Summary

The aim of our research is to increase the understanding of the impact of the legal environment (i.e. creditor rights protection and judicial enforcement) on credit access by using data about firms' credit access in eleven European countries.

It is documented in the literature that the certainty of the law and the opportunity to enforce legal rights in court can impact on the banks' lending decisions and, thus, on the firms' access to credit. In countries with strong creditor protection and rigorous law enforcement system banks will find it easier to control borrower risk and recover the loan in the event of default. As a consequence, banks will be more willing to lend ex ante, reducing the firms' risk to be credit constrained. In this strand of the literature few studies highlight the impact of a country's legal environment on firms' access to finance by directly analysing finance obstacles as reported by firms.

In this respect, our research extend previous work by investigating the effect of both creditor protection (i.e. the strength of the creditor and property rights) and judicial enforcement (i.e. the time to resolve a dispute, its costs and number of procedures required) on credit access (i.e. whether or not the firm obtained the credit they applied for).

We rely on the Survey on the Access to Finance of Enterprises (SAFE) dataset from the European Central Bank, which collects information directly from firms about their access to credit, the use of different sources of finance as well as the liquidity and finance constraints. We integrate it with information on the legal systems in Europe by using data from the World Bank, the Heritage Foundation and Eurostat. We end up with a dataset that contains 48,590 complete observations collected between 2009 and 2012, of which 12,504 observations are about firms that applied for a loan in the period. We re-test our findings by using Heckman selection to address potential selection bias as well as different controls and different estimation techniques. In addition, we investigate the economic impact of creditor protection and judicial enforcement on credit access by examining the probability of obtaining credit in different judicial contexts.

Our research suggests that strong creditor and property rights as well as a rigorous judicial enforcement system support the bank's lending decision favouring the provision of credit to firms. Our results also suggest that a firm which operates in a country with weak creditor protection and a low-quality judicial enforcement system can face a competitive disadvantage with respect to a firm located in a country with strong creditor protection and a

high-quality judicial enforcement system. Interestingly, we find differences of up to 30% in terms of the probability of gaining credit among countries that are all member states of the European Union.

Our results have relevant policy implications for banks and firms. By improving the quality of the laws, credit access for firms can be facilitated. While we are not the first to come to the conclusion that better laws improve external debt financing, our evidence is very specific and direct, based on the analysis at firm level since it is based on the firms' semi-annual self-assessment of their financing situation. Second, a judicial enforcement system that is characterized by short, cheap and simple proceedings creates favourable conditions for bank lending. Even though changing legal codes and improving the quality of the judicial enforcement system is difficult, the economic returns of such changes can be large as shown by our economic analysis.

Introduction

Eneo Domizio Ulpiano, in Liber Secundum, Digesto explains that "Iuris praecepta sunt haec: honeste vivere, alterum non laedere, suum cuique tribuere" (The precepts of the Law are these: to live honestly, to not injure, to attribute to each his own). In other words, the rule of law is the base for the development of any society. Thus, the Roman Empire developed a wide corpus of laws that stimulated the growth of the empire as well as the business activities inside and outside it. In medieval times, the Magna Carta (1215) constituted an unprecedented building block for democracy, as it called for good and fair laws and introduced access the courts for everybody. In the 19th century, the Code Napoléon (1804) brought about a considerable step forward in the rule of law by replacing local customs and introducing clear legal rules, which were understandable for everybody. In addition to that, laws could only be applied, if they had been duly promulgated. Retrospective application of the law was, therefore, prohibited. The historic development shows that a clear set of laws as well as a reliable legislative process and judicial enforcement system have been fundamental building blocks of the development of society because they generate certainty about what is allowed and what is not, as well as what to do in order to defend the rights granted.

The certainty of the law and the opportunity to enforce legal rights in court can impact on the banks' lending decisions and, thus, on the firms' access to credit. In reality, banks as delegated monitors (Diamond 1984), play a key role in supporting the development of the economy by investing people's savings in reliable firms and projects. The quality of the laws and institutions that support them in dealing with delinquent customer becomes important in being certain that they will be able to recover the loan in the case of a borrower's default. In countries with strong creditor protection and rigorous law enforcement system banks will find it easier to control borrower risk and recover the loan in the event of default. As a consequence, banks will be more willing to lend ex ante (La Porta et al. 1997), reducing the firms' risk to be credit constrained. At the same time, banks will be exposed to a greater legal risk and have a lower probability to force repayment in countries with little creditor protection and feeble law enforcement (Esty and Megginson 2003). Hence, they will be reluctant to grant credit, hereby constraining firms in credit access.

Previous research has addressed this topic but only marginally. Some former studies investigate the impact of a country's legal system on the terms of the credit, such as size, maturity and interest rate of the loan agreement (Laeven and Majnoni 2005, Laeven and

Majnoni 2005, Qian and Strahan 2007, Bae and Goyal 2009). These studies, thus, concentrate on existing loan agreements and do not shed light directly on the question if firms are able to obtain the required bank loans. Our analysis is close to the work of Beck, Demirgüç-Kunt, and Levine (2005) and Beck, Demirgüç-Kunt, and Maksimovic (2005). They both investigate the impact of a country's legal origin on firms' access to finance by using data on finance obstacles perceived by firms. However, the focus of this research lies on the impact of the political independence of the judiciary and the adaptability of legal systems on credit access, not on its effectiveness in supporting the plaintiff to recover the credit provided. The authors, thus, measure very specific traits of a country's legal system instead of the overall quality of the laws and institutions. In the first paper the authors look at the proportion of loans allocated to small firms and, thus, do not examine directly whether firms are credit constrained by controlling for firms specific characteristics. In the second they focus on some firms' characteristics and on the the effect of financial, legal, and corruption problems on firms' growth rates. Size matters a lot as small firms seem to benefit the most from financial and institutional development.

Our research aims to increase our understanding of the impact of the legal environment (i.e. creditor rights protection and judicial enforcement) on credit access by using data about firms' credit access in eleven European countries. We extend previous work by investigating the effect of both creditor protection (i.e. the strength of the creditor and property rights) and judicial enforcement (i.e. the time to resolve a dispute, its costs and number of procedures required) on credit access (i.e. whether or not the firm obtained the credit they applied for). Differently from previous papers, we consider an objective measure of credit constraints as this is not based on firms' perceptions of difficulties to access finance but on the amount of loan applications rejected and on other measures of credit constraints related to the amount of loans requested and on the price attached to those loans. We rely on the Survey on the Access to Finance of Enterprises (SAFE) dataset from the European Central Bank, which collects information directly from firms about their access to credit, the use of different sources of finance as well as the liquidity and finance constraints. We integrate it with information on the legal systems in Europe by using data from the World Bank, the Heritage Foundation and Eurostat. We end up with a dataset that contains 48,590 complete observations collected between 2009 and 2012, of which 12,504 observations are about firms that applied for a loan in the period. We re-test our findings by using Heckman selection to address potential selection bias as well as different controls and different

estimation techniques. In addition, we investigate the economic impact of creditor protection and judicial enforcement on credit access by examining the probability of obtaining credit in different contexts.

The results we obtain are robust and suggest that the better the judicial enforcement system (reduced costs, reduced time, and limited number of procedures) and the higher the creditor protection (high overall strength of the legal system, high property rights protection), the lower the probability that the firms are credit constrained. Moreover, effective creditor protection and judicial enforcement reduce the firms' risk of only obtaining a fraction of the requested loan. Finally, we find that these variables have considerable economic impact: the probability to obtain credit is up to 40% higher in countries with a better legal system.

The remainder of the paper is structured as follows. In Section 2 we present the results of previous research. Section 3 develops the hypotheses. Section 4 discusses our dataset and the methodology and illustrates the variables used in the analysis. Descriptive statistics are presented in Section 5. In Section 6 we present the econometric findings about the impact of the legal system on the credit provided to firms, as well as a set of robustness checks. In Section 7 we examine the economic impact, and section 8 discusses the implications and concludes.

2. Theoretical research

Firms tend to depend on bank debt in order to finance both their ongoing activities and growth. However, their ability to access bank credit is affected by the limited quantity and accuracy of information available (Mason and Stark 2004, Berger and Frame 2007), which impedes the assessment of their creditworthiness and can adversely affect access to credit (Petersen and Rajan 1994, Moro, Fink, and Kautonen 2014). In order to evaluate the firms' riskiness and decrease the risk of incurring future losses, banks aim to access additional information. Previous research has attributed to the bank's ability to access such additional information either to characteristics of the market (e.g. financial market concentration as in Neuberger, Pedergnana, and Räthke-Döppner (2008)), the bank (e.g. complexity of the bank as in Berger et al. (2005)), the firm (e.g., age of the firm as in Angelini, Di Salvo, and Ferri (1998) and Petersen and Rajan (1994)) or to characteristics of the relationship between the bank and the firm (e.g., length of the relationship, number of banks as in Howorth, Peel, and Wilson (2003)). However, even when the information asymmetry between the bank and the firm is reduced and the bank's assessment of the

creditworthiness of the customer is facilitated, lending to firms remains an activity that involves a risk of customer's default on the credit granted by the bank. Thus, the bank has to take into consideration the extent to which creditor rights are protected in determining what kind of loans and what kind of price and non-price terms can be offered to firms, as creditor rights affect the bank's monitoring incentives and re-contracting costs that can be costly when creditor rights are poorly enforced (Bae and Goyal 2009).

Prior research suggests that in countries with strong creditor protection, bank loans are associated with more concentrated ownership (Esty and Megginson 2003), longer maturities (Qian and Strahan 2007), and lower interest rates (Bae and Goyal 2009). Thus, firms benefit from a high level of creditor protection by accessing credit at more favourable terms. In addition to that, better legal systems are associated with a higher proportion of banks loans allocated to information opaque borrowers, such as Small and Medium Enterprises - SMEs (Haselmann and Wachtel 2010), and a lower proportion allocated to large enterprises. Beck, Demirgüç-Kunt, and Martínez Pería (2011) find that the legal system influences both credit allocation and the terms of the loan agreement, showing that as developing countries with a weak legal system show a lower share of credit granted to firms, as well as higher fees and interest rates. Research also finds some support that countries with a strong legal environment have better developed financial systems and, as a consequence, a higher level of long-run growth (Levine 2002).

Still, even countries with similar rules on creditor protection may enforce these rules differently. Bhattacharya and Daouk (2002) as well as Bhattacharya and Daouk (2009) go one step further and argue that it is not the mere existence of laws that matters, but their enforcement by linking their work to (Diamond 2004) who points out that borrowers may have incentives to misbehave, if banks do not enforce due to expensive or ineffective enforcement systems. In such context, more short-term debt, which allows banks to review their lending decision more frequently, will be issued. Esty and Megginson (2003) examine the relation between legal risk and debt ownership and stress that an increase in legal risk, defined as the degree of the enforcement of creditor rights, leads to a higher demand for monitoring and re-contracting, which will, in turn, lead to less concentrated debt ownership. This happens because re-contracting is more expensive in the case of a larger number of banks involved and re-contracting will be more difficult if a large number of banks has been injured by the creditor already. Thus, creditor rights and legal enforcement are positively associated with debt ownership concentration. However, previous research does not find a

clear link between loan concentration and credit access, as some research suggests that firms face a greater difficulty in accessing credit in case of concentrated lending relationships (Howorth, Peel, and Wilson 2003), while others find exactly the opposite (Elsas and Krahnen 1998). Thus, no final conclusion on constraints in access to credit can be derived by looking at the positive association between legal enforcement and debt ownership concentration. Jappelli, Pagano, and Bianco (2005) suggest that the cost of enforcing contracts has considerable impact on market performance: Improvements in judicial efficiency, which is measured by the recovery rate of inside or outside collateral that lenders can expect in case of an insolvent borrower at the end of a trial, decrease the proportion of overdrawn credit lines (suggesting, possibly, a lower risk for the firm to be credit constrained) and increase the lending volume (as total lending to domestic firms divided by the GDP). Similarly, Laeven and Majnoni (2005) find that judicial efficiency and inflation rates are the main drivers of interest rate spreads.

Even within a country, financial outcomes may vary due to different judicial efficiency. For example, findings from Spain suggest that in judicial districts, where trials are longer, bank financing is costlier and firms are of smaller size (Fabbri 2010). Additional support is provided by research in Mexican states which shows that states with more efficient legal enforcement systems have larger firms (Laeven and Woodruff 2007).

Moreover, previous research suggests that the quality of the law and the quality of judicial enforcement can vary independently (La Porta et al. 1998, Pistor, Raiser, and Gelfer 2000). In addition to that, Pistor, Raiser, and Gelfer (2000) argue that high-quality laws cannot substitute for weak judicial enforcement. Thus, in order to stimulate external finance both high-quality laws protecting the creditors' rights and rigorous law enforcement are required.

Actually, both the interest rate charged to the borrower and guarantees or covenants required by the bank only provide an indirect measure of the difficulties faced by the firms in accessing credit. Similarly, the overall amount of credit obtained by a firm provides a weak and indirect measure of whether firms access all credit required. This is because a firm can also be credit constrained when it obtains a large amount of credit but the credit obtained is not enough to finance its current and future operations and projects. The quoted works by Beck, Demirgüç-Kunt, and Martínez Pería (2011) and Jappelli, Pagano, and Bianco (2005) are more specific in looking credit access but use macroeconomic proxies (e.g. the quota of credit provided to SMEs with respect the overall amount of credit provided) and are

interested in examining whether an groups of economic actors are credit constrained. In other words, they do not examine whether the firms are credit constrained. All things considered, we can conclude that no previous research examines the direct link between the legal system and credit access (in the form of whether the borrowers obtain the credit they need) at firm level.

By examining the impact of creditor rights and judicial enforcement with a variable that measures exactly whether or not the firms in the sample are credit constrained, our research allows for addressing the limitation of the quoted research as well as expanding our knowledge of the legal environment's role in credit access. In addition, to the best of our knowledge no research focused on the European Union thus, comparing the role of the legal system in countries that allow for a free exchange goods and services.

3. Development of hypotheses

We tackle the issue of measuring the impact of creditor rights and judicial enforcement on access to credit with five hypotheses which cover the five different measures of the quality of the legal system. We keep the hypotheses separate giving for each of them some references to the existing literature.

In the context of lending relationships, a strong legal system is characterised by collateral and bankruptcy laws that protect the creditor in case of a default of the borrower. As a good legal environment increases the banks' recovery in the event of default, banks are expected to be more willing to provide credit on favourable terms (La Porta et al. 1997, Qian and Strahan 2007). Thus, the better the legal environment, the easier credit access for firms will be. This argument leads us to the following hypothesis:

H1: The greater the strength of the judicial system, the lower the probability that firms are denied credit.

Bank lending decisions are also affected by the level of property rights protection (Bae and Goyal 2009). If private property is secured by clear laws which are enforced by the state, lenders can rely on the fact that they can enforce their rights quickly and efficiently if the borrower does not pay the principal and the interest at the date stipulated. In addition to that, a high level of property rights protection reflects a high level of independence of the judiciary as well as a low level of corruption in the judiciary. Thus, banks can expect a fair trial, which reduces their risk to face difficulties in recovering the loan. A higher certainty to recover the principal and the interest increases the banks' willingness to provide credit upfront and, thus,

reduces the firms' risk to be credit constrained. On the basis of these arguments, we propose the following hypothesis:

> **H2:** The higher the level of property protection, the lower the probability firms are denied credit.

Access to finance for firms is also dependent on the quality of the judicial enforcement system. However, as the quality of judicial enforcement cannot be captured in a single index (Safavian and Sharma 2007), we investigate three different aspects that affect the enforcement of the law: (i) the number of procedures required to enforce a contract; (ii) the time needed to resolve a dispute in the court; and (iii) the cost for resolving a dispute in the court (court fees and attorney fees).

The number of procedural steps, i.e. interactions between the parties or between the parties and the judge or court officer, required by law or commonly used, reflects the arduousness of the judicial enforcement system. This is because banks can be refrained from going to court if there is a high number of procedural steps, as the number of procedures implies additional effort and resources that have to be invested in recovering the credit. The higher the number of procedures necessary to recover the loan via legal action, the riskier it is for the bank to face a loss in case the borrower does not repay the debt and, thus, the more reluctant the bank will be to grant credit to firms. Accordingly, we formulate the following hypotheses:

> **H3:** The lower the number of procedures, the lower the probability that firms are denied credit.

Djankov et al. (2003) use the duration of dispute resolution in order to construct an index of procedural formalism of dispute resolution. They find that higher procedural formalism is a strong predictor of longer duration of dispute resolution and that higher procedural formalism is associated with lower quality justice. Similarly, Safavian and Sharma (2007) stress that reforms in creditor rights have little impact on bank lending in countries and regions with a very long duration of dispute resolution, but a significant impact in countries and regions with fast dispute resolution. The research by Fabbri (2010) suggests that even within a country, differences in the length of civil trials affect the cost of lending. Thus, the shorter the duration of dispute resolution in court, the more willing banks will be to grant credit to firms, as they will be able to recover the loan more quickly. On the basis of this argument, we formulate the following hypothesis:

H4: The shorter the time to resolve a dispute at court, the lower the probability that firms are denied credit.

The quality of judicial enforcement is also determined by the accessibility to the enforcement system, which is reflected in the costs of accessing the court. Djankov et al. (2008) construct a measure of the efficiency of debt enforcement using the cost of the trial as well as the duration and the likely disposition of the assets. Their findings suggest that debt enforcement is highly inefficient and that this inefficiency correlates with underdeveloped debt markets. Moreover, Ahlquist and Prakash (2010) examine the relationship between foreign direct investment and the host countries' contract enforcement environment and find that foreign direct investment is associated with lower contract enforcement costs. Thus, enforcement costs seem to influence economic behaviour. We expect the costs incurred for court fees and attorney fees, expressed as a percentage of the claim, to influence the availability of loans for firms. The higher the costs for settling a dispute at court, the more reluctant banks will be to grant credit to firms. Against this backdrop, we propose the following hypotheses:

H5: The lower the costs incurred for settling a dispute at court, the lower the probability that firms are denied credit.

4. Data and Methodology

4.1 Data

Our research relies primarily on the Survey on the Access to Finance of Enterprises (SAFE) conducted on behalf of the European Commission and the European Central Bank. It collects information about access to finance by enterprises within the European Union. The SAFE has been run on a given set of questions every 6 months since 2009 and systematically covers eleven euro area countries (namely: Austria, Belgium, France, Finland, Germany, Greece, the Netherlands, Ireland, Italy, Portugal and Spain).

Firms in the sample are randomly selected from the Dun & Bradstreet database. The sample is stratified by firm size class, economic activity and country. As regards stratification by firm size class, the sample is constructed to offer approximately the same precision for micro (1 to 9 employees), small (10 to 49 employees) and medium-sized firms (50 to 249 employees). A group of large firms (250 or more employees) is also included, which covers less than 10% of the total sample.

The sample sizes for each economic activity are selected to ensure adequate representation across the four largest activities: industry, construction, trade and services. Agriculture, forestry, fishing, financial intermediation, public administration, activities of households, extra-territorial organizations, as well as bodies and holding companies are excluded. Moreover, the sample sizes in the participating countries are selected on the basis of representation at the country level. The person interviewed in each company is a top level executive (owner, general manager, financial director or chief accountant). The questionnaire is translated into the local language. For the robustness checks we used a subset of the SAFE dataset for which we have detailed information on the financial statements of the firms.

Between 4500 and 6000 firms were interviewed in each wave. 77% of them were present only in one wave, less than 20% in two non-consecutive waves. In this respect we do not have a proper panel dimension that allows us to exploit firm-effects in our analysis as only few firms are present for a number of consecutive survey rounds.

We integrated the data provided by the SAFE dataset with information from the quarterly Bank Lending Survey (BLS) run by national central banks on behalf of the European Central Bank. The BLS collects information about the banks' lending activities in the previous three months and the banks' propensity to lend in the next six months. It provides specific data on the banks' propensity to lend to large, small/medium firms and households. We use the data on large and small/medium firms in the previous three months as controls for the availability of credit in the market

We also rely on the Eurostat database for general economic data. Eurostat is the statistical office of the European Union located in Luxembourg. Its task is to provide the European Union with statistics at the European level that enable comparisons between countries and regions. We use Eurostat in order to access homogeneous data on GDP growth, unemployment rates, inflation and the Herfindhal-Hirschman indices of bank concentration.

In order to access data about the quality of the enforcement system we used variables from two different sources: (i) the World Bank and (ii) the Heritage Foundation. With regard to the World Bank, we use the "World Development Indicators", which are determined by using officially-recognized international sources. They present the most current and accurate global development data available and include national, regional and global estimates. In addition, we use the World Bank's "Doing Business" dataset. It offers economic data from 2003 to the present and is considered highly reliable. With regard to the Heritage Foundation,

we rely on the "Index of Economic Freedom" dataset.

All datasets used provide information that is revised on a yearly basis for each country included in our dataset.

4.2 Methodology

Since the dependent variable in our regressions is binary (bank loan obtained or not by the specific firm), we approach the analysis using traditional Logit regression (Hosmer and Lemeshow 2000). As we rely on a dataset with few firms present for more than one survey round, we are prevented from employing fixed effect panel regression that would have allowed to consider the evolution of lending relationships through time at firm level.

Our estimation is based on the following model

$$\log \frac{Prob\ (y_i)}{1 - Prob\ (y_i)} = F(\beta_0 + \sum_{j=1}^{k} x_{ij}) \tag{1}$$

Where our binary independent variable is regressed on a set of variables describing the legal system and on a set of control variables as explained in the next sections.

There is no variable that measures the quality of the legal system. Thus, we carried out the analysis by relying on a set of different variables that catch different aspects of the quality of the legal system. In order to do this, we approach the analysis from two different perspectives. We estimate a set of different regressions, where we enter the different independent variables one by one. This approach avoids multicollinearity problems linked to the fact that our independent variables are significantly correlated with each other.

In addition, we implemented a number of robustness checks. First, since our approach might raise questions about the sample selection bias due to our use of a dataset that considers only the firms that applied for a loan (12,504 out 48,590), we re-estimate our hypotheses following Heckman (1979) approach. We rely on the original dataset that contains 48,590 complete observations and employ the binary response model with sample selection, where the dependent variable indicates whether the firm applies for a loan - an approach similar to Piga and Vivarelli (2004) and Piga and Atzeni (2007). The identification of the selection equation requires at least one variable that determines the demand for a loan, but is irrelevant in the regressions. We find good candidates in the following variables: (i) the change in the turnover of the firm, since growing firms are more likely to need additional finance and, thus, to apply for a loan, even if this does not mean that they will be successful;

(ii) the change in the profit of the firm, since more profitable firms are less likely to apply for a loan, as they can use their profit to finance their activities (Myers and Majluf 1984); (iii) the firm's independence, since firms that belong to a group are less likely to apply for a loan, as they can rely on finance provided by the holding company or other group companies. All variables described above impact on the firm's decision to apply for a loan, but should not affect the probability that the lender will decide to provide the requested finance to the firm. On the statistical point of view the covariate we use have a greater correlation with the selected variable than with the dependent variable.

Second, in order to examine the joint role of these variables, we examine the possibility to generate a construct that represents the latent variable weakness of the legal system. In order to generate such construct, we first use confirmatory factor analysis to examine whether one factor can be extracted from our variables. Then, we use four out of five variables to generate the factor, which we define as legal system weakness. We then re-estimate the original specification entering the factor instead. We estimate the regression both according to the basic Logit regression and the Heckman selection process.

Third, we retest the specification using a different set of variables. Indeed, the European Central Bank has compiled a dataset that contains additional and more detailed variables namely, financial figures for the surveyed firms. The financial statements are extracted from the Amadeus Bureau Van Dijk dataset. Thus, we re-tested the hypotheses by using the same independent variables but a different set of controls comprising profitability ratios, liquidity ratios, leverage ratios and other variables that typically proxy the presence of asymmetric information.

Fourth, we also re-estimate our models using sampling weights where the weights, originally included in the survey, adjust the sample to be representative of the frame from which the sample was drawn.

Fifthly, since the original estimation of the standard errors can suffer from clustering of errors at country level, we re-estimate our specification using robust estimation of the standard errors.

Finally, we check whether the results can be affected by the estimation approach we used. In order to examine such potential issues we re-estimated the regressions by using Probit estimation. We retested our regression by using bootstrap estimation of the standard errors (Efron and Tibshirani 1998).

4.3 Dependent Variables

Among the question asked in the SAFE survey, firms' managers are asked whether they obtained the credit they applied to in the last six months. We use the answer to this question (the firm obtained all the credit = 1; the firm did not obtain the credit = 0) as dependent variable.

In order to pursue some of the robustness checks, we also examine whether the firms are only partially constrained. In this case, we use as dependent variable whether the firm obtained the largest majority of the loan it applied to that is more than 75% (the firm obtained the largest majority of the credit = 1; otherwise = 0). We use also the answer to the question whether the firm obtained less than 75% of the credit (the firm obtained only a fraction of the credit = 1; otherwise = 0) to investigate whether the firm obtained only a fraction of the credit originally asked.

4.4 Independent Variables

We use different independent variables for each hypothesis we test. We examine the strength of the legal rights (H1) by using the "Strength of Legal Rights Index" (STRENGTH_LEGAL_SYS) as computed by the World Bank. The index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and, thus, facilitate lending. The index ranges from 0 to 10, with higher scores indicating a greater legal protection and thus a set of laws that are better designed to expand access to credit. We collected it for each year considered and for each country in our sample. The variable is country variant but completely time invariant for the years considered. The differences across countries are presented in Figure 1a.

FIGURE 1 HERE

We argue that the higher the property protection, the lower the probability that the firms are denied credit (H2). In order to test this hypothesis we rely on the "Index of Economic Freedom" as computed by the Heritage Foundation by using the variable Property Rights. This variable measures the ability of individuals to accumulate private property, secured by clear laws that are fully enforced by the state. Hence, it measures the degree to which a country's laws protect private property rights and the degree to which its government

enforces those laws. It also assesses the likelihood that private property will be expropriated. The more certain the legal protection of property, the higher a country's score (the score is between 0 and 100). Also this variable is country variant but completely time invariant for the years considered (Figure 1b).

In order to test the impact of the number of procedural steps involved in a commercial dispute (H3) we use the data provided in the Doing Business dataset published by the World Bank (N_PROCEDURES). A procedural step is defined as any interaction, required by law or commonly used in practice, between the parties or between them and the judge or court officer. Other procedural steps, internal to the court or between the parties and their counsel, are counted as well. Procedural steps include steps to file and serve the case, steps to assign the case to a judge, steps for trial and judgment and steps necessary to enforce the judgment. The variable is country variant and is time variant (but only with minor changes) in Italy, Spain and Portugal (Figure 1c).

Our fourth hypothesis argues that the longer the time to resolve a dispute, the higher the probability that firms are denied credit. Again, we rely on the "Doing Business" dataset and use the variable that records the average time needed to resolve a dispute in calendar days (TIME). The time is counted from the moment the plaintiff decides to file the lawsuit in court until payment. It includes both the days when actions take place and the waiting periods between them. The variable is country variant and is time variant (but only with minor changes) in Greece and Ireland (Figure 1d).

In our fifth hypothesis we suggest that the costs for settling a dispute at court impact the probability that firms are denied credit. In this case we use the variable that reflects the costs incurred as a percentage of the claim (COST_PERC) as computed in the "Doing Business" dataset. The variable includes three types of costs: court costs, enforcement costs and average attorney fees. Court costs include all court costs that the plaintiff must advance to the court, regardless of the final cost for the plaintiff. Enforcement costs are all costs that the plaintiff must advance to enforce the judgment through a public sale of the opponent's assets. Average attorney fees are the fees that the plaintiff must advance to a local attorney to represent him or her in the standardised case. The variable is country variant and is time variant (but only with a minor change) only in Netherlands (Figure 1e).

4.5 Controls

We include a set of variables to control for the firm characteristics, the moment in

time when the data was collected, the country and the economic context. In terms of firm characteristics, the SAFE dataset provides some information about the size of the firm by grouping the firms into four categories: micro, small, medium and large. We use three dummy variables that identify micro (MICRO), small (SMALL), medium (MEDIUM) sized firms. Our expectation is that larger firms are less likely to face a rejection, since they are perceived as more solid and successful.

In addition, the SAFE dataset clusters the firms according to four age categories: younger than two years, between two and five years, between five and nine years, older than nine years. We use 2_YEARS, 2_5_YEARS, and 5_9_YEARS dummy variables to identify the age group for each observation. According to previous research (Petersen and Rajan 1994, Berger and Udell 1995) we expect older firms to be more likely to be successful, when they apply for a loan: older firms have a more consolidated reputation that can be helpful, when the lenders have to take lending decisions (Martinelli 1997).

We also control for the financial strategy pursued by the firm by taking into consideration the different sources of finance used during the last period. We use dummies which identify whether the firm used trade credit (TRADE_CREDIT), leasing (LEASING), retained earnings (RETAINED_EARNINGS) or raised additional equity (EQUITY) in the last period.

As explained above in two cases the independent variables are time invariant at country level and in the other cases the variability is very minor and only for few countries. Thus, they present a very high correlation with the country. As a consequence, we do not include any control for the country that would have raised collinearity issues. However, we consider a set of macroeconomic variables that are country-specific and time-varying to capture the macroeconomic context in which firms operate.

In particular we control for the change in the gross domestic product (GDP), inflation rate (INFLATION) and overall unemployment rate (UNEMPL_OVERALL) for each country and each semester. These data are obtained from the Eurostat dataset. Moreover, we account for the overall financial context by using the European Central Bank's BLS coefficients for small/medium and large firms (CREDIT_ACCESS). Since the index is not available for all countries included in the analyses, we use the average index, when it is not available. However, this only happens in a very limited number of cases and for smaller countries. Additionally, we consider the structure of the financial industry by using the Herfindahl index

of bank concentration in each country (HHI), as previous research suggests an impact of bank competition on credit access (Neuberger, Pedergnana, and Räthke-Döppner 2008, Carbó-Valverde, Rodríguez-Fernández, and Udell 2009).

The dataset provides unmatched observations for eight semesters and, thus, we use seven dummies that identify the semester, when the observation was collected.

In the regression based on the Heckman selection process, we employ a categorical variable (CHANGE_TURNOVER) to identify whether the turnover faced a reduction (-1), stability (0) or growth (+1) in the semester considered. The very same approach is applied to profit (CHANGE_PROFIT). Regrettably, the standard SAFE dataset does not provide any information about the monetary value of turnover or profit. These two variables as well as a dummy variable which measures, whether the firm belongs to a group or not (INDEPENDENT), are expected to affect the decision to apply for a loan.

Finally, in the case of the regression that considers the financial figures, we exploit a newly compiled dataset that augments the responses of the firms to the SAFE with their detailed annual balance sheet and profit and loss information (Ferrando and Mulier 2013). Survey data of a given year are matched with balance sheet data of the year prior to the survey year. For example, we match the 2008 balance sheet data with the second half of 2009 survey data. The rationale is that these are the most recent balance sheet data that firms had available to convince financial intermediaries to provide them external finance.

The dataset has around 25,000 observations collected in the period 2009-2012 (waves 3 to 9) for the same set of countries. The dataset includes detailed information about the financial statements of the firms derived from the Amadeus Bureau Van Dijk database. For our analysis we use financial leverage, financial pressure, profit margin, collateral and cash holdings. These variables are the most commonly used in the literature when explaining the determinants of financial constraints. In more detail, the set of financial variable is defined as follows: 1) financial leverage, is a ratio of financial debt over total assets and indicates how much the firm is indebted. The expected relation between leverage and financing constraints is negative as a lot of debt on the balance sheet might make it difficult or costly for the firm to obtain new debt; 2) an index of financial pressure, which is computed as a ratio between interests payments and the sum of profits, depreciation and interest payments itself (if the ratio is high, a firm is already paying a significant amount of interest, either because it is too indebted or it is paying a high interest rate on the existing debt; in both cases, banks will

probably be more reluctant to grant credit to it); 3) profit margin, computed as operating profits/losses over turnover, is a proxy for the profitability of the firm (if the value is high, firms should have an higher probability to obtain credit as high profitability increases the likelihood that they will be able to repay their loans); 4) Collateral, computed as fixed assets over total assets (if the value is high, firms should have an higher probability to obtain credit as collateral serves as protection for a lender against a borrower's default) and 5) cash holdings, computed as cash and cash equivalents over total assets, indicating the liquidity position of the firm (if the value is high, firms should have a higher probability to obtain credit).

5. Descriptive Statistics

The dataset we use contains 48,590 complete observations from 11 countries regarding the period between the first semester of 2009 and the second semester of 2012. The dataset is reduced to 12,504 observations, if only the firms that applied for a loan are considered. The difference can be attributed to firms that either did not need finance (and, thus, did not apply for a loan), or were discouraged from applying for a loan (i.e., firms that needed a loan, but did not submit an application, because they thought that it would be rejected). Figure 2 reports the percentages of firms having applied for a loan (lines) and of those that were successful in obtaining them (bars) as a percentage of all firms in the sample. These percentages are varying a lot across countries and over time

----

FIGURE 2 HERE

The summary statistics are reported in Table 1. The first column reports data on the entire dataset, the second data on the firms that applied for a loan.

TABLE 1 HERE

In our sample the majority of the firms are either the micro or small and only 7.5% of them are classified as large. Three quarters of the firms in the sample are independent, 76% are older than 9 years. All in all, the majority of firms in the sample are small, independent and well-established. Only about one third of the firms enjoyed an increase in turnover

(34%), whereas 28% did not experience any change and 38% suffered from a contraction. More than 45% experienced a reduction in profit, whereas only 27.3% enjoyed an increase. The statistics can be explained by the fact that observations made in the period between 2009 and 2012, thus falling into a period of overall economic stagnation. In terms of financing, firms appears to use leasing and trade credit quite intensively. Retained earnings are used by 32% of the firms. The coefficient which measures the credit made available by the banking system (BLS data) is +5.09. As positive values of the variable CREDIT_ACCESS are associated with a contraction of the credit provided by the banking system, this means that, on average, credit is in contraction. This datum is in line with the more conservative lending policies pursued by the banks after the 2008 financial crisis and the introduction of the more stringent Basel III rules.

Moving from the overall dataset to the sub-sample which considers only firms that actually applied for a loan (12,504 observations), the distribution of firm dimension is very similar to that of the overall sample: the majority of the firms are either micro (24%) or small (34%), followed by medium firms (31%), while large firms account for 11% of the sub-sample. Almost two thirds of the firms (64%) face a decrease or a stable turnover during the period considered. Only 27% of them enjoyed an increase in profit. In terms of financing, they rely on trade credit and leasing (43.8% and 42.9% respectively). Interestingly, firms that apply for a loan appear to rely more on alternative sources of finance, since they are around 10% more likely to use leasing and trade credit and 9% more likely to rely on leasing.

6. Results

The results are reported in table 2. The first regression (specification A) reports the results without any dependent variable. This allows us to examine the impact of each independent variable by comparing other regressions with specification A. Subsequently, we enter the independent variables one at a time.

TABLE 2

Specification A, which includes only the controls, is significant and R2 is .0634. The size of the firm affects its access to credit: the bigger the firm, the less adversely affected it is in accessing credit. The very same logic applies to the age of the firm: as the age class increases the negative impact of age on credit access become smaller, which suggests a

relative lower probability to be rejected. Different sources of finance impact negatively on credit access: equity seems to be the strongest alternative to a loan, whereas leasing is not significant. As expected, the BLS index is negatively related to credit access: the less prone banks are to lend, the less likely it is that firms are successful in their loan application. Economic expansion (GDP) is positively related to credit access, whereas unemployment is negatively related.

Specification B includes the strength of the legal system (STRENGTH_LEGAL_SYS) and is significant. R2 improves to .0689. This implies that the variable improves the variance explained by 7.98% with respect to the basic regression. There is no change in the significance level of the controls. Only INFLATION, which was not significant in specification A, turns to be significant and positively related to obtaining credit. The dependent variable STRENGTH_LEGAL_SYS is highly significant and has the expected sign: the stronger the legal system, the higher the probability that a bank lends to the firm. Thus, H1 is confirmed.

Specification C allows for an investigation of the role of property protection (PRO_PROTECT). The specification is highly significant (p<.0001). R2 is at .0664, suggesting a limited contribution of the variable in explaining the overall variance. There is no change in the significance level of the controls except for LEASING, which is not significant. The dependent variable is significant at .001 and has the expected sign: the higher the property rights protection, the higher the probability that a bank lends to the firm. Hence, H2 is confirmed as well.

Specification D enters the number of procedures (N_PROCEDURES). It is highly significant (p<.0001). R^2 improves to .0639 that is by a mere .78% with respect to specification A. This suggests that the number of procedures explains only a limited fraction of the variance. There is no change in the significance level of the controls except for INFLATION, which is not significant. RETAINED_PROFIT and BLS are significant at .01. The dependent variable N_PROCEDURES is highly significant at .0001 and has the expected sign: the greater the number of procedures the plaintiff incurs, the lower the probability that a bank grants credit to the firm. For that reason, H3 is also confirmed.

Specification E enters the time (days) needed in order to resolve a dispute (TIME). The specification is highly significant (p<.0001). R^2 improves to .0729, thus by 13.03% with respect to specification A. Interestingly, there are no changes in the significance level of the

controls except for LEASING (which is significant, even if only at .10), GDP (which is not significant) and HHI (which is highly significant). The dependent variable TIME is significant at .001 and has the expected sign: the longer the time required to resolve a dispute, the lower the probability that a bank lends to the firm. Thus, H4 is also confirmed.

Specification F considers the cost of the proceeding as a percentage of the claim (COST_PERC). This specification is also highly significant (p<.0001). R^2 improves to .0732 and is the highest among all the regressions presented. Interestingly, there are no changes in the significance level of the controls except for GDP, which, in this case, is significant. The dependent variable COST_PERC is significant at the .001 level and has the expected sign: the higher the costs incurred to resolve a dispute, the lower the probability that a bank grants credit to the firm. H5 is therefore also confirmed.

6.1 Robustness Checks

The analysis presented above provides clear results. Nevertheless, some additional robustness checks are needed before making any generalisation.

The first robustness check investigates, if our results are affected by the sample selection bias. In order to deal with this issue, we re-estimate the regressions by relying on the Heckman sample selection model (Heckman 1979). We model the selection process using variables that measures the change in turnover, the change in profit and if the firm belongs to a group. The results, elaborated using a Heckman Probit estimation, are reported in table 3.

TABLE 3

All specifications are significant. In addition, there are no major changes in the sign and the significance level with respect the regression presented in table 2: regarding firm dimension, the variable MEDIUM turns to be not significant in specifications C and D in the Heckman selection specification (it used to be significant but borderline). RETAINED-PROFIT is less significant in the Heckman selection than it used to be, whereas LEASING is now more significant. From the general environment point of view there are minor changes in CREDIT_ACCESS (BLS by ECB), GDP (which are now significant only at .05 in case of specification B) and in INFLATION, which is not significant in specification E. Interestingly, there are no changes in the sign and the significance level of the independent variables. In

fact, the significance decreases slightly in case of the number of procedures (N_PROCEDURES). All in all, the results strongly confirm all previous findings in terms of support to the hypotheses.

In addition, we investigate the joint effect of the independent variables. As it is not possible to enter all covariates in the regression at the same time due to multicollinearity problems, we develop a construct that we define as weak legal system (WEAK_ SYS) by incorporating the variables mentioned above in it. This construct aims at measuring the overall weakness of the legal system. In order to set it up, we first reverse the STRENGTH_LEGAL_SYS and PRO_PROTECT in order to generate variables that measure the weakness of the legal system and the low level of property rights protection. Thus, all measures considered point in the same direction: the higher the value of our variables, the lower the quality of the legal system. Then, we implement exploratory factor analysis. We obtain the highest Crombach alpha of .6400 (which is acceptable) by considering four out of five variables: STRENGTH_LEGAL_SYS, N_PROCEDURE, COST_PERC and PRO_PROTECT. Thus, we decide to exclude TIME from our construct. Factor analysis suggests that one factor can be extracted, as only the first factor has an Eigenvalue higher than 1 (namely 2.5868) and explains 64.67% of the variance. All variables load in the factor at .46 or higher. The Kaiser-Meyer-Olkin measure of sampling adequacy is .62, which is acceptable. Thus, we generate the score of a variable that measures the weakness of the legal system (WEAK_SYS). Figure 1e reports the country ranking of the indicator that we entered in the regression. The results are reported in table 4 (Logit regression) and table 5 (Heckman selection).

TABLE 4

TABLE 5

The specification is highly significant (p<.0001). R^2 is .0684, thus slightly higher than in specification A. Interestingly, there are no major changes in the significance level of the controls. The dependent variable WEAK_SYS is significant at the .001 level and has the

expected negative sign. The finding suggests that the legal system impacts on the availability of credit to firms: the weaker the legal system, the lower the probability that a bank lends to the firm. Also in case of the Heckman selection, the specification is significant. There are minor changes in the significance level of some controls, but there is no change in the significance level of the factor WEAK_SYS. The results provide additional support to our original findings: an overall weak legal system decreases the credit provided to firms.

We also re-estimate the models using the newly compiled dataset that, although smaller, contains a different set of controls, namely detailed financial figures and ratios based on the financial figures of a subsample of the surveyed companies. This approach has the advantage that we control in an objective way the financial position of firms when they are applying for a bank loan. The results are reported in table 6 (basic model) and 7 (Heckman selection).

TABLE 6

TABLE 7

The empirical results show that firms with higher debt ratios or firms that are using a larger part of their profits to replay interests have a higher probability of being rejected. More profitable firms or firms with more collateral, by contrast, have more chances to obtain loans when they apply for. As in the previous models, we test then the role of the inefficiency/efficiency of the legal system by entering one by one the variables characterising the legal framework. All the results of the baseline analysis using the Logit model or through the Heckman sample selection model are confirmed.

We also retest our model using a set of different independent variables. We generate a dummy variable that measure whether the legal context is effective in enforcing the law (1) or not (0) by using the median values of each independent variable as threshold. The dummy variables are always significant and have the same sign as in the original model (results not reported here).

Finally, we run some econometric robustness checks. First, we re-estimated the

regressions by using a different econometric approach, namely the Probit regression, instead of the Logit regression. This allows us to check, whether our results are sensitive to the econometric approach used in our estimations. The results are not reported here. Interestingly, there is no change in the significance and the sign of the variables entered in the regression. Second we re-estimate the standard errors by using a Bootstrap estimation of the standard errors (Efron and Tibshirani 1998). Also in this case, there is no change in the significance of the variables entered in the regressions. Third, we run an additional robust check by estimating our basic regression and the Heckman selection model using sampling weights. Originally, the survey provides weights to restore the proportions of the economic weight (in terms of number of employees) of each size class, economic activity and country. The results are not reported here but they do not change the overall significance of our legal system variables. We also re-estimate the specification considering that errors can be clustered at country level. In this case, we use a robust estimation of the standard errors. The results are not reported here but no change emerges. Finally, we re-estimate the specification including dummy variables that identify the industries (results not reported). Also in this case, there are no changes with respect our original results.

All in all, our robustness checks suggest that our original findings are robust to the sample selection, alternative specifications, alternative independent variables as well as different estimation techniques.

7. Economic Impact

So far our analysis shows that the creditor protection and judicial enforcement affect statistically the access to credit. However, we did not check the economic robustness and solidity of our results as well as their economic impact. In this section we will examine both aspects.

Our basic regressions look at firms that applied for a loan and discriminate between the ones that obtained the entire requested amount and the ones that did not obtain it. In fact, firms can be credit constrained also when they obtain only a fraction of the requested credit. The impact of creditor rights and judicial enforcement is higher if it contributes to the reduction of any form of financial constraints (partial or total) by helping firms to obtain the entire requested loan. Thus, creditor rights and judicial enforcement should not only increase the probability of obtaining the total credit required, but should also reduce the probability that a firm obtains only a fraction of it. In order to examine this aspect we re-estimate our

regressions by using two alternative dependent variables: whether the firm obtains a large part of the credit requested (>75%) and whether the firm obtains a minor fraction of the credit requested (<75%). According to our reasoning, STRENGTH_LEGAL_SYS and PRO_PROTECT have to be negatively related to both dependent variables since the stronger the legal system and the higher the property protection the lower the probability to be granted only a fraction of the loan (be it major or minor fraction). Similarly, N_PROCEDURE, COST_PERC, TIME should be positively related to obtaining only a fraction of the loan since the greater the number of the procedures involved, the time spent in curt and the cost of a legal proceeding, the higher the probability that banks will grant only a fraction of the requested loan in order to reduce the risk incurred.

The results of the re-estimated regressions are reported in table 6 and 7. We also re-estimated the regressions reported in table 8 and 9 by using the entire dataset and applying the Heckman selection. The results are not reported here. Nevertheless, no significant change emerges.

TABLE 8

TABLE 9

Our expectations find strong support in case of STRENGTH_LEGAL_SYS and PRO_PROTECT. In both cases, the coefficient turns to be negative and statistically significant. Interestingly a decreasing trend emerges when we look at firms which are partially credit constrained: the coefficients in the regressions that rely on firms that obtain the largest part of the loan are greater than those for the sample of firms which obtain only a fraction of it.

Also in the case of COST_PERC and TIME, the results confirm our expectations when we compare the coefficients of the firms which obtain the entire credit (table 2) to those which obtain the largest majority of it. However, the change in the coefficient between the two groups is very small and statistically not significant. Finally, in the case of N_PROCEDURE our expectations are confirmed but only when we compare the firms that

obtained the loan with those that obtained only a minor fraction of it. Table 10 presents the trends in the coefficients (using odd ratios).

TABLE 10

The results suggest that creditor rights and judicial enforcement support the access to the entire amount of credit also by reducing the risk that the firms can be partially constrained in accessing credit.

The final step of our analysis is to examine the economic impact of creditor rights and judicial enforcement. Indeed, the results so far show that the legal system impacts positively on the probability to obtain the overall amount of credit requested. However, it is important to examine the economic impact of such a statistically significant relationship. In order to do so, we estimate the probability of obtaining credit for each independent variable at their lowest and highest figure. For instance, in the case of the cost of the procedure, we estimate the probability to obtain credit for a firm in Italy (where the cost is 29.9% of the claim) and in Finland (where the cost is 13.3% of the claim). The results are reported in table 11.

TABLE 11

Regarding the strength of the legal system the value of the variable in the dataset is between 3 (Italy) and 9 (Ireland). Our calculations show that a firm which operates in a country with a very strong legal system (in our case Ireland, probability .7589) is almost 30% more likely to obtain the credit it applies for than a firm which operates in a country with weak legal system (Italy, probability .5870). With regard to property protection the difference is smaller (around 19%) but nevertheless economically relevant (.6026 vs .7172).

TIME and COST_PROC present very similar differences: the probability to access all credit needed is between 53% and 54% in a country less capable of enforcing the law (in our sample Italy), while it is between 73% and 75% in a country that is effective in enforcing the law (in our sample Finland). The variable that generates the smallest differential in the probability to obtain credit is the number of procedures (the difference being below 9%).

Finally, we re-estimated the probability of obtaining credit by using the factor WEAK_ENFORCEMENT. Interestingly enough, the country with the weakest enforcement capability appears to be Italy while that one with the strongest enforcement capability is Ireland. In the case of Italy, the probability for the average firm to obtain credit is .5435 while in the case of Ireland it is .7402. The difference is economically relevant.

8. Conclusion

Our research suggests that strong creditor and property rights as well as a rigorous judicial enforcement system support the bank's lending decision favouring the provision of credit to firms. This is because better creditor protection makes it easier for banks to deal with borrower risk, as the probability increases that they are able to recover the loan in case of default. Thus, firms benefit from a high level of creditor protection due to the higher probability to obtain the external finance required for their ongoing activities or investments. These results are robust to a set of econometric tests we pursue.

Our findings have considerable implications for both firms and banks. As far as firms are concerned, our results suggest that a firm which operates in a country with weak creditor protection and a low-quality judicial enforcement system can face a competitive disadvantage with respect to a firm located in a country with strong creditor protection and a high-quality judicial enforcement system: firm's more difficult access to bank loans constrains its development and growth, as alternative sources of finance, such as leasing and trade credit, cannot fill the financing gap (Beck and Demirgüç-Kunt 2008). In contrast, a firm with easier access to finance due to a better legal environment will be faster in entering new markets, developing new products, expanding and consolidating market share and, thus, show a higher level of growth. Interestingly, we find differences of up to 30% in terms of the probability of gaining credit among countries that are all member states of the European Union. The context (i.e. the single market policies pursued in the European Union, such as the free exchange of goods or services and the freedom of establishment) implies that differences in the probability to obtain credit may have considerable implications for firms located in countries where credit access is more difficult because of weak creditor protection and poor judicial enforcement since they cannot be protected via trade barriers. The big differences regarding the probability of obtaining credit suggest that not only can firms located in a weak legal environment be adversely affected when they try to enter a foreign market, but they can even

struggle to maintain their local market share because of the competition from foreign firms. In addition, as the freedom of establishment facilitates relocation of affected firms to another EU member state, differences in the legal system can also motivate firms to move to countries where the legal system allows for easier access to credit. Thus, effective/ineffective legal system can have considerable impact on a country's GDP growth and job creation: countries with strong creditor protection and rigorous judicial enforcement, will benefit from increase GDP and job creation; countries with weak creditor protection and feeble law enforcement will be adversely affected. Our argument is in line with previous research suggests that the credit granted in a supportive legal environment is provided at more favourable conditions (Qian and Strahan 2007) and also to firms investing in intangible assess or firms with highly volatile returns (Giannetti 2003). This aspect is even more important, as there is some consistency at country level in terms of creditor protection and judicial enforcement: Italy ranks last in four out of five dimensions, while Finland ranks in the top in three out of five dimensions.

As far as banks are concerned, we find that a bank which operates in a country with strong creditor protection and a high-quality judicial enforcement system enjoys a competitive advantage, as it can be more confident to retrieve the loan in case of a borrower's default with respect a bank that operates mainly in a country with weak creditor protection system and low enforcement quality. By looking at firm specific relationship our results are in line with previous findings at macroeconomic level that explain that the legal environment impacts on the development of debt markets (La Porta et al. 1997, Djankov et al. 2008) and that, the development of debt markets affects economic growth (Levine 1998).

Our results have relevant policy implications for banks and firms. By improving the quality of the laws credit access for firms can be facilitated. While we are not the first to come to the conclusion that better laws improve external debt financing, our evidence is very specific and direct, based on the analysis at firm level since it is based on the firms' semi-annual self-assessment of their financing situation. Second, a judicial enforcement system that is characterized by short, cheap and simple proceedings creates favourable conditions for bank lending. Even though changing legal codes and improving the quality of the judicial enforcement system is difficult, the economic returns of such changes can be large as shown by our economic analysis.

Our research presents also some limitations. First, we examine only European firms because of the characteristics of the dataset used. It could be interesting to replicate the

research in other areas in order to verify whether the role of legal systems is robust around the world. The enlargement of the dataset could also allow to examine if the legal environment is equally relevant in developing and in developed economies. Second, our dataset is, in fact, cross sectional. This implies that we are not able to examine the impact of the legal system on the specific firm's loan request success through time. We do not think that this aspect affects our results dramatically. Nevertheless, in order to have a more fine grained understanding of the impact of judicial systems, such an analysis could be very interesting.

Notwithstanding the limitations of the dataset and context, the study indicates that the effectiveness and efficiency of the law and the judicial enforcement system might play a more important role in lending relationships than has been acknowledged.

References

Ahlquist J. S., A. Prakash. 2010. FDI and the costs of contract enforcement in developing countries. *Policy Sciences* **43** 181-200.

Angelini P., R. Di Salvo, G. Ferri. 1998. Availability and cost of credit for small businesses: Customer relationships and credit cooperatives. *Journal of Banking & Finance* **22**(6-8) 925-954.

Bae K. H., V. K. Goyal. 2009. Creditor rights, enforcement, and bank loans. *Journal of Finance* **64** 823-860.

Beck T., Demirgüc-Kunt, M. Asli V. 2008. Financing patterns around the world: Are small firms different?. *Journal of Financial Economics* **89** 467-487.

Beck T., A. Demirgüc-Kunt, R. Levine. 2005. Law and firms' access to finance. Am. Law Econ Revue (Spring 2005) 7 (1): 211-252

Beck T., A. Demirgüc-Kunt, V. Maksimovic. 2005. Financial and Legal Constraints to Growth: Does Firm Size Matter? *Journal of Finance* **60**, . Am.: 137-177

Beck T., A. Demirgüç-Kunt, M. S.Martínez Pería. 2011. Bank financing for SMEs: Evidence across countries and bank ownership types. *Journal of Financial Services Research* **39** 35–54. Berger A. N., S. W. Frame. 2007. Small business credit scoring and credit availability. *Journal of Small Business Management* **45**(1) 5–22.

Berger A. N., N. H. Miller, M. A. Petersen, R. G. Rajan, J. C. Stein. 2005. Does function follow organizational form? evidence from the lending practices of large and small banks. *Journal of Financial Economics* **76** 237-269.

Berger A. N., G. F. Udell. 1995. Relationship lending and the lines of credit in small firm finance. *Journal of Business* **68**(3) 351-381.

Bhattacharya U., H. Daouk. 2009. When no law is better than a good law. *Review of Finance* **13** 577-627.

Bhattacharya U., H. Daouk. 2002. The world price of insider trading. *Journal of Finance* **57** 75-107.

Carbó-Valverde S., F. Rodríguez-Fernández, G. F. Udell. 2009. Bank market power and SME financing constraints. *Review of Finance* **13** 309–340.

Diamond D. W. 2004. Presidential address, committing to commit: Short-term debt when enforcement is costly. *Journal of Finance* **59** 1447-1479.

Diamond D. W. 1984. Financial intermediation and delegated monitoring. *Review of Economic Studies* **51**(3) 393-414.

Djankov S., O. Hart, C. McLiesh, A. Shleifer. 2008. Debt enforcement around the world. *Journal of Political Economy* **116**(6) 1105-1149.

Djankov S., R. La Porta, F. Lopez de Silanes, A. Shleifer. 2003. Courts. *Quarterly Journal of Economics* **118** 453-517.

Efron B., R. T. Tibshirani. 1998. *An Introduction to the Bootstrap*. Chapman and Hall CRC, Boca Raton (FL).

Elsas R., J. P. Krahnen. 1998. Is relationship lending special? evidence from credit data in Germany. *Journal of Banking & Finance* **22**(10-11) 1283-1316.

Esty B. C., W. L. Megginson. 2003. Creditor rights, enforcement, and debt ownership structure: Evidence from the global syndicated loan market. *Journal of Financial and Quantitative Analysis* **38** 37-59.

Fabbri D. 2010. Law enforcement and firm financing: Theory and evidence. *Journal of the European Economic Association* **8** 776-816.

Ferrando A., K. Mulier. 2013. Firms' financing constraints: do perceptions match the actual situation?. *The Economic and Social Review, vol. 46, No1, pp.87-118.*

Giannetti M. 2003. Do better institutions mitigate agency problems? evidence from corporate finance choices. . *Journal of Financial and Quantitative Analysis* **38** 185-213.

Haselmann R., P. Wachtel. 2010. Institutions and bank behavior: Legal environment, legal perception and the composition of bank lending. *Journal of Money, Credit and Banking* **42** 965-984.

Heckman J. J. 1979. Selection bias as a specification error. *Econometrica* **47**(1) 153-161.

Hernandez-Canovas G., P. Martınez-Solano. 2010. Relationship lending and SME financing in the continental european bank-based system. *Small Business Economics* **34**(4) 465–482.

Hosmer D. W., S. Lemeshow. 2000. *Applied Logistic Regresson*. Wiley, New York.

Howorth C., M. J. Peel, N. Wilson. 2003. An examination of the factors associated with bank switching in the U.K. small firm sector. *Small Business Economics* **20**(4) 305-317.

Jappelli T., M. Pagano, M. Bianco. 2005. Courts and banks: Effects of judicial enforcement on credit markets. *Journal of Money, Credit and Banking* **37** 223-244.

La Porta R., F. Lopez-de-Silvanes, A. Shleifer, R. W. Vishny. 1998. Law and finance. *Journal of Political Economy* **106** 1113-1155.

La Porta R., F. Lopez-de-Silvanes, A. Shleifer, R. W. Vishny. 1997. Legal determinants of external finance. *Journal of Finance* **52** 1131-1150.

Laeven L., C. Woodruff. 2007. The quality of the legal system, firm ownership, and firm size. *Review of Economics and Statistics* **89** 601-614.

Laeven L., G. Majnoni. 2005. Does judicial efficiency lower the cost of credit?. *Journal of Banking and Finance* **29** 1791-1812.

Levine R. 1998. The legal environment, banks and long-run economic growth. . *Journal of Money, Credit and Banking* **30** 596-613.

Levine R. 2002. Bank-based or market-based financial systems: Which is better?. *Journal of Financial Intermediation* **11** 398–428.

Martinelli C. 1997. Small firms, borrowing constraints, and reputation,. *Journal of Economic Behavior & Organization* **33** 91-105.

Mason C., M. Stark. 2004. What do investors look for in a business plan? A comparison of the investment criteria of bankers,venture capitalists and business angels. *International Small Business Journal* **22**(3) 227-248.

Moro A., M. Fink, T. Kautonen. 2014. How do banks assess entrepreneurial competence? Public data vs. voluntary information disclosure. *International Small Business Journal* **35**(5) 525-544.

Myers S. C., N. S. Majluf. 1984. Corporate finance and investment decisions when firms have information investors do not have. *Journal of Financial Economics* **13** 187-221.

Neuberger D., M. Pedergnana, S. Räthke-Döppner. 2008. Concentration of banking relationships in switzerland: The result of firm structure or banking market structure? *Journal of Financial Services Research* **33**(2) 101–126.

Petersen M. A., R. G. Rajan. 1994. The benefits of lending relationships: Evidence from small business data. *Journal of Finance* **49**(1) 3-37.

Piga C. A., G. Atzeni. 2007. R&D investment, credit rationing and sample selection. *Bulletin of Economic Research* **59**(2) 149-178.

Piga C. A., M. Vivarelli. 2004. Internal and external R&D: A sample selection approach. *Oxford Bulletin of Economics and Statistics* **66**(4) 457-482.

Pistor K., M. Raiser, S. Gelfer. 2000. Law and finance in transition economies. *Economics of Transition* **8** 325-368.

Qian J., P. E. Strahan. 2007. How laws and institutions shape financial contracts: The case of bank loans. *Journal of Finance* **62** 2803-2834.

Safavian M., S. Sharma. 2007. When do creditor rights work?. *Journal of Comparative Economics* **35** 484-508.

Figure 1: Indicators of the quality of the legal system

(a)

Strength of legal rights index (0-10)

Source: Doing business, World Bank

(b)

Property protection

Source: Heritage Foundation

(c)

Procedures (number)

Source: Doing business, World Bank

(d)

Time (days)

Source: Doing business, World Bank

(e)

Cost (% of claim)

Source: Doing business, World Bank

(f)

overall weak legal system

Source: authors' elaboration

Figure 2

Applications for bank loans and successful ones *(over the preceding six months; percentage of respondents)*

Source: ECB (SAFE)

Table 1 Basic Statistics

Variables presented in the table include: dummy for bank loan application; dummy obtained; dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); dummy whether the firm is independent; change in profit and in turnover (reduction -1, unchanged 0, increase, 1), dummies for finance sources (use of retained profits, trade credit, leasing, equity); credit access BLS coefficient, GDP growth, inflation rate, unemployment rate, Herfindahl-Hirschman Index of bank concentration; coefficients for strength of the legal system, number of procedures, length of the proceeding and its cost.

Sig.: * <.1; ** .05 <; *** <01

	Entire dataset					Subsample loan application				
	Obs	Mean	Std. Dev.	Min	Max	Obs	Mean	Std. Dev.	Min	Max
Loan Requested	48590	0.2573	0.4372	0	1					
Loan Obtained	48590	0.1688	0.3746	0	1	12504	0.6560	0.4751	0	1
Micro	48590	0.3337	0.4715	0	1	12504	0.2406	0.4274	0	1
Small	48590	0.3346	0.4719	0	1	12504	0.3388	0.4733	0	1
Medium	48590	0.2567	0.4368	0	1	12504	0.3144	0.4643	0	1
<2 years	48590	0.0206	0.1420	0	1	12504	0.0202	0.1408	0	1
between 2 and 5 years	48590	0.0804	0.2719	0	1	12504	0.0702	0.2555	0	1
between 5 and 9 years	48590	0.1350	0.3417	0	1	12504	0.1233	0.3288	0	1
Independent	48590	0.7696	0.4211	0	1	12504	0.8008	0.3994	0	1
Change in Turnover	48590 -	0.0376	0.8463	-1	1	12504 -	0.0304	0.8679	-1	1
Change in Profit	48590 -	0.1831	0.8341	-1	1	12504 -	0.2205	0.8441	-1	1
Retained_earnings	48590	0.3202	0.4666	0	1	12504	0.3654	0.4816	0	1
Trade_credit	48590	0.3434	0.4748	0	1	12504	0.4385	0.4962	0	1
Leasing	48590	0.3387	0.4733	0	1	12504	0.4294	0.4950	0	1
Equity	48590	0.0612	0.2396	0	1	12504	0.0747	0.2629	0	1
Credit_Access (BLS by ECB)	48590	5.0911	10.0691	-14	60	12504	4.5129	9.1660	-14	60
GDP	48590 -	0.5068	2.9055	-8.5	4	12504 -	0.7530	2.8952	-8.5	4
Inflation	48590	1.9119	1.2038	-1.7	4.7	12504	1.8945	1.2036	-1.7	4.7
Unempl_Overall	48590	10.9822	5.7705	3.25	25.7	12504	11.5589	5.8435	3.25	25.7
HHI (Bank concentration)	48590	0.0879	0.0767	0.0206	0.37	12504	0.0750	0.0629	0.0206	0.37
Strength_legal_sys	48590	5.8592	1.7779	3	9	12504	5.6655	1.7440	3	9
N_procedure	48590	32.3352	5.9404	21	41	12504	33.4593	5.8910	21	41
Time	48590	599.6380	293.9340	235	1210	12504	631.2119	315.1038	235	1210
Cost_perc	48590	19.0701	5.6625	8.8	29.9	12504	19.3095	5.7596	8.8	29.9
Pro_Protect	48590	75.0775	14.4595	50	95	12504	72.3361	14.3199	50	95

Table 2 Regressions (basic model)

Variables presented in the table include: dummy credit obtained; dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); dummies for finance sources (use of retained profits, trade credit, leasing, equity); credit access BLS coefficient, GDP growth, inflation rate, unemployment rate, Herfindahl-Hirschman Index of bank concentration; coefficients for strength of the legal system, number of procedures, length of the proceeding and its cost.

Sig.: * <.1; ** .05 <; *** <01

		Specification A			Specification B			Specification C			Specification D			Specification E			Specification F		
		Number of obs		12504	Number of obs		12504	Number of obs		12504	Number of obs		12504	Number of obs		12504	Number of obs		12504
		LR chi2(21)		1021.15	LR chi2(22)		1109.54	LR chi2(22)		1068.63	LR chi2(22)		1028.06	LR chi2(22)		1173.44	LR chi2(22)		1178.42
		Prob > chi2		0	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000
		Pseudo R2		0.0634	Pseudo R2		0.0689	Pseudo R2		0.0664	Pseudo R2		0.0639	Pseudo R2		0.0729	Pseudo R2		0.0732
Bank_loan_obtained		Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z
Firm Char.	Micro	-0.6064	0.0775	***	-0.6140	0.0778	***	-0.6153	0.0777	***	-0.6162	0.0776	***	-0.6284	0.0781	***	-0.6232	0.0782	***
	Small	-0.2728	0.0729	***	-0.2746	0.0732	***	-0.2804	0.0731	***	-0.2832	0.0731	***	-0.2972	0.0735	***	-0.2977	0.0736	***
	Medium	-0.1092	0.0730		-0.1000	0.0732		-0.1089	0.0731		-0.1133	0.0730		-0.1228	0.0735	*	-0.1252	0.0736	*
firm age	<2 years	-0.1373	0.1385		-0.1763	0.1392		-0.1215	0.1391		-0.1493	0.1387		-0.1917	0.1396		-0.1401	0.1394	
	between 2 and 5 years	-0.4470	0.0756	***	-0.4365	0.0758	***	-0.4341	0.0758	***	-0.4374	0.0757	***	-0.4378	0.0760	***	-0.4270	0.0761	***
	between 5 and 9 years	-0.2548	0.0595	***	-0.2262	0.0599	***	-0.2366	0.0597	***	-0.2481	0.0596	***	-0.2352	0.0600	***	-0.2420	0.0599	***
firm finance	Retained_earnings	-0.0889	0.0425	**	-0.1220	0.0428	***	-0.1122	0.0427	***	-0.0887	0.0425	**	-0.1188	0.0428	**	-0.1152	0.0428	***
	Trade_credit	-0.2721	0.0412	***	-0.2282	0.0416	***	-0.2428	0.0415	***	-0.2690	0.0412	***	-0.1861	0.0420	***	-0.1753	0.0421	***
	Leasing	-0.0245	0.0417		-0.0609	0.0421		-0.0546	0.0421		-0.0267	0.0418		-0.0775	0.0422	*	-0.0722	0.0422	*
	Equity	-0.2923	0.0763	***	-0.3449	0.0767	***	-0.3362	0.0768	***	-0.3071	0.0764	***	-0.3356	0.0770	***	-0.3662	0.0775	***
	Semester								Included in the regressions										
Economic Environment	Credit_Access (BLS by ECB)	-0.0098	0.0025	***	-0.0054	0.0025	**	-0.0104	0.0025	***	-0.0103	0.0025	***	-0.0158	0.0025	***	-0.0178	0.0026	***
	GDP	0.0903	0.0098	***	0.0439	0.0110	***	0.0517	0.0113	***	0.0797	0.0106	***	0.0167	0.0115		0.0753	0.0098	***
	Inflation	-0.0248	0.0228		0.0607	0.0247	**	0.0286	0.0242		-0.0100	0.0236		0.0401	0.0235	*	-0.0304	0.0228	
	Unempl_Overall	-0.0684	0.0037	***	-0.0760	0.0038	***	-0.0681	0.0037	***	-0.0622	0.0044	***	-0.0850	0.0040	***	-0.0860	0.0040	***
	HHI (Bank concentration)	-0.0171	0.3510		-1.0617	0.3696	***	-0.8528	0.3728	**	-0.1774	0.3530		-1.0449	0.3615	***	-1.2857	0.3652	***
Legal effectiv.	Strength_legal_sys				0.1325	0.0141	***												
	Pro_Protect							0.0129	0.0019	***									
	N_procedures										-0.0129	0.0049	***						
	Time													-0.0973	0.0001	***			
	Cost_perc																-0.0488	0.0039	***
	_cons	2.3403	0.1051	***	1.5038	0.1367	***	1.3218	0.1804	***	2.6791	0.1668	***	3.0251	0.1212	***	3.6388	0.1512	***

Table 3 Regressions (Heckman selection model)

Variables presented in the table include: dummy credit obtained; dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); dummies for finance sources (use of retained profits, trade credit, leasing, equity); credit access BLS coefficient, GDP growth, inflation rate, unemployment rate, Herfindahl-Hirschman Index of bank concentration; coefficients for strength of the legal system, number of procedures, length of the proceeding and its cost. In addition, the selection model relies on dummy whether the firm is independent; change in profit and in turnover (reduction -1, unchanged 0, increase, 1)

Sig.: * <.1; ** .05 <; *** <01

		Specification A (Heckman)			Specification B (Heckman)			Specification C (Heckman)			Specification D (Heckman)			Specification E (Heckman)			Specification F (Heckman)		
		Number of obs	48590		Number of obs	48590		Number of obs	48590		Number of obs	48590		Number of obs	48590		Number of obs	48590	
		Censored obs	36086		Censored obs	36086		Censored obs	36086		Censored obs	36086		Censored obs	36086		Censored obs	36086	
		Uncensored obs	12504		Uncensored obs	12504		Uncensored obs	12504		Uncensored obs	12504		Uncensored obs	12504		Uncensored obs	12504	
		Wald chi2(21)	61.98		Wald chi2(22)	47.44		Wald chi2(22)	63.26		Wald chi2(22)	58.82		Wald chi2(22)	55.86		Wald chi2(22)	72.78	
		Prob > chi2	0		Prob > chi2	0.0013		Prob > chi2	0		Prob > chi2	0		Prob > chi2	0.0001		Prob > chi2	0	
		Log likelihood	-35172		Log likelihood	-35126		Log likelihood	-35150		Log likelihood	-35169		Log likelihood	-35096		Log likelihood	-35096	
Bank_loan_obtained		Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z
Firm Char.	Micro	-0.2293	0.0524	***	-0.2054	0.0503	***	-0.2605	0.0597	***	-0.2328	0.0541	***	-0.2377	0.0551	***	-0.2773	0.0596	***
	Small	-0.0957	0.0349	***	-0.0846	0.0320	***	-0.1123	0.0395	***	-0.0996	0.0357	***	-0.1052	0.0365	***	-0.1261	0.0410	***
	Medium	-0.0334	0.0294		-0.0244	0.0262		-0.0384	0.0328		-0.0347	0.0296		-0.0376	0.0299		-0.0480	0.0347	
firm age	<2 years	-0.0642	0.0556		-0.0736	0.0499		-0.0625	0.0613		-0.0690	0.0556		-0.0859	0.0561		-0.0708	0.0644	
	between 2 and 5 years	-0.1828	0.0422	***	-0.1590	0.0397	***	-0.1948	0.0463	***	-0.1786	0.0425	***	-0.1771	0.0426	***	-0.1983	0.0463	***
	between 5 and 9 years	-0.1034	0.0292	***	-0.0829	0.0261	***	-0.1059	0.0316	***	-0.1006	0.0292	***	-0.0960	0.0287	***	-0.1127	0.0323	***
firm finance	Retained_earnings	-0.0337	0.0181	*	-0.0410	0.0177	*	-0.0483	0.0208	**	-0.0335	0.0181	*	-0.0460	0.0192	**	-0.0529	0.0214	**
	Trade_credit	-0.1094	0.0243	***	-0.0815	0.0210	***	-0.1078	0.0257	***	-0.1078	0.0245	***	-0.0747	0.0210	***	-0.0823	0.0230	***
	Leasing	-0.0150	0.0165		-0.0285	0.0149	*	-0.0286	0.0186		-0.0160	0.0165		-0.0369	0.0171	**	-0.0384	0.0197	*
	Equity	-0.1137	0.0365	***	-0.1188	0.0364	***	-0.1446	0.0425	***	-0.1192	0.0375	***	-0.1303	0.0387	***	-0.1656	0.0444	***
	Semester								included in the regressions										
Economic Environment	Credit_Access (BLS by ECB)	-0.0037	0.0012	***	-0.0017	0.0010	*	-0.0044	0.0014	***	-0.0040	0.0013	***	-0.0059	0.0016	***	-0.0078	0.0018	***
	GDP	0.0347	0.0076	***	0.0134	0.0054	**	0.0223	0.0065	***	0.0302	0.0074	***	0.0059	0.0048		0.0331	0.0075	***
	Inflation	-0.0103	0.0093		0.0217	0.0097	**	0.0115	0.0109		-0.0043	0.0094		0.0159	0.0098		-0.0135	0.0108	
	Unempl_Overall	-0.0274	0.0049	***	-0.0270	0.0053	***	-0.0299	0.0055	***	-0.0249	0.0047	***	-0.0333	0.0063	***	-0.0391	0.0066	***
	HHI (Bank concentration)	-0.0487	0.1368		-0.4063	0.1443	***	-0.3916	0.1725	**	-0.1131	0.1385		-0.4246	0.1564	***	-0.5489	0.1898	***
Legal effectiv.	Strength_legal_sys				0.0470	0.0103	***												
	Pro_Protect							0.0054	0.0013	***									
	N_procedures										-0.0051	0.0021	**						
	Time													-0.0379	0.0001	***			
	Cost_perc																-0.0216	0.0041	***
	_cons	-0.0751	0.2662		-0.5402	0.1833	***	-0.3337	0.2668		0.0551	0.3034		0.1740	0.3277		0.7481	0.4456	*
q7a_a_Bank_loan_application																		
	d2_Independent	0.1107	0.0161	***	0.1042	0.0173	***	0.1142	0.0161	***	0.1102	0.0163	***	0.1104	0.0163	***	0.1170	0.0157	***
	q2_a_Change_Turnover	0.0236	0.0104	**	0.0200	0.0103	*	0.0282	0.0108	***	0.0241	0.0105	**	0.0246	0.0104	**	0.0307	0.0104	***
	q2_e_Change_Profit	-0.0609	0.0089	***	-0.0579	0.0093	***	-0.0622	0.0089	***	-0.0609	0.0089	***	-0.0605	0.0089	***	-0.0626	0.0088	***
	_cons	-0.7485	0.0141	***	-0.7429	0.0152	***	-0.7514	0.0140	***	-0.7482	0.0142	***	-0.7481	0.0143	***	-0.7536	0.0136	***

Table 4 Regressions (Factor)

Variables presented in the table include: dummy credit obtained; dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); dummies for finance sources (use of retained profits, trade credit, leasing, equity); credit access BLS coefficient, GDP growth, inflation rate, unemployment rate, Herfindahl-Hirschman Index of bank concentration; factor for the weakness of the legal system.

Sig.: * <.1; ** .05 <; *** <01

Number of obs	12504
LR chi2(22)	1101.28
Prob > chi2	0.0000
Pseudo R2	0.0684

Bank_loan_obtained		Coef.	Std. Err.	P>z
Firm Char.	Micro	-0.6240	0.0778	***
	Small	-0.2898	0.0732	***
	Medium	-0.1120	0.0733	
firm age	<2 years	-0.1548	0.1392	
	between 2 and 5 years	-0.4262	0.0759	***
	between 5 and 9 years	-0.2291	0.0598	***
firm finance	Reteined_earnings	-0.1142	0.0427	***
	Trade_credit	-0.2272	0.0416	***
	Leasing	-0.0593	0.0421	
	Equity	-0.3541	0.0769	***
	Semester	Included in the regressions		
Economic Environment	Credit_Access (BLS by ECB)	-0.0102	0.0025	***
	GDP	0.0453	0.0110	***
	Inflation	0.0403	0.0241	*
	Unempl_Overall	-0.0678	0.0037	***
	HHI (Bank concentration)	-1.0788	0.3689	***
Legal	Weak_Sys	-0.2251	0.0251	***
	_cons	2.2797	0.1057	***

Table 5 Regression (Factor with Heckman Selection)

Variables presented in the table include: dummy credit obtained; dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); dummies for finance sources (use of retained profits, trade credit, leasing, equity); credit access BLS coefficient, GDP growth, inflation rate, unemployment rate, Herfindahl-Hirschman Index of bank concentration; factor for the weakness of the legal system. In addition, the selection model relies on dummy whether the firm is independent; change in profit and in turnover (reduction -1, unchanged 0, increase, 1)

Sig.: * <.1; ** .05 <; *** <01

Number of obs	48590
Censored obs	36086
Uncensored obs	12504
Wald chi2(22)	57.78
Prob > chi2	0.0000
Log likelihood	-35132.83

q7b_a_Bank_loan_obtained		Coef.	Std. Err.	P>z
Firm Char.	Micro	-0.2538	0.0598	***
	Small	-0.1113	0.0390	***
	Medium	-0.0374	0.0318	
firm age	<2 years	-0.0741	0.0595	
	between 2 and 5 years	-0.1843	0.0453	***
	between 5 and 9 years	-0.0992	0.0306	***
firm finance	Retained_earnings	-0.0474	0.0203	**
	Trade_credit	-0.0971	0.0245	***
	Leasing	-0.0305	0.0180	*
	Equity	-0.1468	0.0427	***
	Semester	Included in the regressions		
Economic Environment	Credit_Access (BLS by ECB)	-0.0041	0.0014	***
	GDP	0.0182	0.0061	***
	Inflation	0.0165	0.0107	
	Unempl_Overall	-0.0287	0.0055	***
	HHI (Bank concentration)	-0.4671	0.1744	***
Legal	Weak_Sys	-0.0928	0.0209	***
	_cons	-0.0059	0.3228	

q7a_a_Bank_loan_application				
	d2_Independent	0.1127	0.0163	***
	q2_a_Change_Turnover	0.0274	0.0107	**
	q2_e_Change_Profit	-0.0617	0.0089	***
	_cons	-0.7501	0.0142	***

Table 6 Regressions – Subsample with financial performance

Variables presented in the table include: dummy credit obtained; dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); financial performance of the firm (leverage, interest to EBIT ratio, profit margin assets available as collateral); credit access BLS coefficient, GDP growth, unemployment rate, Herfindahl-Hirschman Index of bank concentration; coefficients for strength of the legal system, number of procedures, length of the proceeding and its cost.

Sig.: * <.1; ** .05 <; *** <01

		Specification A			Specification B			Specification C			Specification D			Specification E			Specification F		
		Number of obs		6,253	Number of obs		6,253	Number of obs		6,253	Number of obs		6,253	Number of obs		6,253	Number of obs		6,253
		LR chi2(18)		737.54	LR chi2(19)		797.8	LR chi2(19)		786.87	LR chi2(19)		769.36	LR chi2(19)		793.2	LR chi2(19)		790.74
		Prob > chi2		0	Prob > chi2		0	Prob > chi2		0	Prob > chi2		0	Prob > chi2		0	Prob > chi2		0
		Pseudo R2		0.0894	Pseudo R2		0.0967	Pseudo R2		0.0953	Pseudo R2		0.0932	Pseudo R2		0.0961	Pseudo R2		0.0958
Bank_loan_obtained		Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z
Firm Char.	Micro	-0.113	0.107		-0.134	0.107		-0.121	0.107		-0.0988	0.107		-0.125	0.107		-0.123	0.107	
	Small	0.0670	0.0938		0.0498	0.0943		0.0545	0.0943		0.0529	0.0941		0.0407	0.0944		0.0388	0.0944	
	Medium	-0.0103	0.0918		-0.0193	0.0923		-0.0143	0.0924		-0.0153	0.0922		-0.0220	0.0923		-0.0222	0.0923	
firm age	<2 years	0.0213	0.374		-0.00700	0.376		0.0151	0.374		0.00569	0.375		-0.000654	0.375		0.00278	0.375	
	between 2 and 5 years	-0.453	0.132	***	-0.44	0.132	***	-0.427	0.132	***	-0.46	0.132	***	-0.443	0.132	***	-0.442	0.132	***
	between 5 and 9 years	-0.185	0.0909	**	-0.174	0.0913	*	-0.17	0.0912	*	-0.183	0.0911	**	-0.175	0.0913	*	-0.179	0.0912	*
firm finance	financial leverage	-1.089	0.148	***	-1.062	0.148	***	-1.13	0.148	***	-1.045	0.148	**	-1.079	0.148	***	-1.085	0.148	***
	financial pressure	-0.489	0.0691	***	-0.473	0.0691	***	-0.472	0.0692	***	-0.476	0.069	***	-0.469	0.0692	***	-0.48	0.0691	***
	profit margin	1.154	0.308	***	1.066	0.309	***	1.088	0.309	***	1.1	0.309	***	1.066	0.309	***	1.05	0.309	***
	collateral	0.637	0.135	***	0.614	0.136	***	0.576	0.136	***	0.657	0.135	***	0.613	0.136	***	0.596	0.136	***
	Semester	Included in the regressions																	
Economic Environ.	Credit_Access (BLS by ECB)	-0.0071	0.00131	***	-0.003	0.00144	**	-0.0069	0.00133	***	-0.00569	0.00134	***	-0.00609	0.00134	***	-0.00734	0.00133	***
	GDP	0.0822	0.0151	***	0.0408	0.0159	**	0.025	0.0171		0.071	0.0151	***	0.0351	0.0163	**	0.0787	0.015	***
	Unempl_Overall	-0.0555	0.0053	***	-0.0639	0.00546	***	-0.0631	0.00549	***	-0.0322	0.00667	***	-0.071	0.00577	***	-0.0699	0.00573	***
Legal effectiv.	Strength_legal_sys				0.157	0.0204	***												
	Pro_Protect							0.0193	0.00277	***									
	N_procedures										-0.0477	0.00849	***						
	Time													-0.0722	9.67E-05	***			
	Cost_perc																-0.0355	0.00487	***
	_cons	1.912	0.146	***	1.2	0.173	***	0.848	0.21	***	3.38	0.303	***	2.666	0.18	***	2.852	0.198	***

Table 7 Regressions – Subsample with financial performance (Heckman)

Variables presented in the table include: dummy credit obtained; dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); financial performance of the firm (leverage, interest to EBIT ratio, profit margin assets available as collateral); credit access BLS coefficient, GDP growth, unemployment rate, Herfindahl-Hirschman Index of bank concentration; coefficients for strength of the legal system, number of procedures, length of the proceeding and its cost. In addition, the selection model relies on dummy whether the firm is independent; change in profit and in turnover (reduction -1, unchanged 0, increase, 1)

Sig.: * <.1; ** .05 <; *** <01

		Specification A (Heckman)			Specification B (Heckman)			Specification C (Heckman)			Specification D (Heckman)			Specification E (Heckman)			Specification F (Heckman)		
		Number of obs		38,106	Number of obs		38,106	Number of obs		38,106	Number of obs		38,106	Number of obs		38,106	Number of obs		38,106
		Censored obs		31985	Censored obs		31985	Censored obs		31985	Censored obs		31985	Censored obs		31985	Censored obs		31985
		Uncensored obs		6121	Uncensored obs		6121	Uncensored obs		6121	Uncensored obs		6121	Uncensored obs		6121	Uncensored obs		6121
		Wald chi2(19)		236.16	Wald chi2(20)		347.43	Wald chi2(20)		372.18	Wald chi2(20)		281.81	Wald chi2(20)		326.95	Wald chi2(20)		326
		Prob > chi2		0	Prob > chi2		0	Prob > chi2		0	Prob > chi2		0	Prob > chi2		0	Prob > chi2		0
		Log likelihood		-20303	Log likelihood		-20279	Log likelihood		-20286	Log likelihood		-20292	Log likelihood		-20282	Log likelihood		-20284
Bank_loan_obtained		Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z
Firm Char.	Micro	-0.0900	0.0637		-0.0966	0.0651		-0.0937	0.0653		-0.0791	0.0643		-0.0917	0.0650		-0.0915	0.0649	
	Small	0.0329	0.0548		0.0245	0.0564		0.0265	0.0566		0.0278	0.0556		0.0211	0.0563		0.0201	0.0562	
	Medium	0.0040	0.0533		-0.0026	0.0548		-0.0009	0.0550		0.00171	0.0540		-0.0032	0.0547		-0.0033	0.0546	
firm age	<2 years	0.0024	0.2250		-0.0073	0.2300		0.0048	0.2300		0.00393	0.2270		0.00048	0.2290		0.00287	0.2290	
	between 2 and 5 years	-0.2600	0.0798	***	-0.2590	0.0811	***	-0.2530	0.0813	***	-0.2650	0.0806	***	-0.2590	0.0810	***	-0.2570	0.0809	***
	between 5 and 9 years	-0.1180	0.0537	**	-0.1150	0.0549	**	-0.1140	0.0551	***	-0.1180	0.0543	**	-0.1150	0.0548	**	-0.1170	0.0547	**
firm finance	financial leverage	-0.5350	0.0928	***	-0.5470	0.0931	***	-0.5830	0.0937	**	-0.5370	0.0928	***	-0.5600	0.0933	***	-0.5630	0.0933	***
	financial pressure	-0.2590	0.0421	***	-0.2610	0.0421	***	-0.2600	0.0421	***	-0.2590	0.0421	***	-0.2580	0.0421	***	-0.2640	0.0421	***
	profit margin	0.6020	0.1800	***	0.5880	0.1840	***	0.5960	0.1850	***	0.5970	0.1820	***	0.5880	0.1830	***	0.5780	0.1830	***
	collateral	0.4150	0.0816	***	0.4080	0.0824	***	0.3900	0.0826	***	0.4260	0.0820	***	0.4060	0.0823	***	0.3960	0.0822	***
	cash holding	1.0170	0.1780	***	0.8880	0.1770	***	0.9190	0.1770	***	0.8920	0.1780	***	0.8570	0.1770	***	0.8610	0.1770	***
	Semester								included in the regressions										
Economic Environ.	Credit_Access (BLS by ECB)	-0.0040	0.0008	***	-0.0019	0.0009	**	-0.0040	0.0008	***	-0.0033	0.0008	***	-0.0035	0.0008	***	-0.0042	0.0008	***
	GDP	0.0482	0.0091	***	0.0269	0.0096	***	0.0201	0.0103	*	0.0435	0.0092	***	0.0245	0.0098	**	0.0472	0.0092	***
	Unempl_Overall	-0.0319	0.0036		-0.0371	0.0036	***	-0.0365	0.0036	***	-0.0209	0.0041	***	-0.0406	0.0039	***	-0.0399	0.0039	***
Legal effectiv.	Strength_legal_sys				0.0843	0.0128	***												
	Pro_Protect							0.0098	0.0017	***									
	N_procedures										-0.0232	0.0051	***						
	Time													-0.0377	0.0001	***			
	Cost_perc																-0.0183	0.0031	***
	_cons	0.4690	0.3330		0.2610	0.3170	***	0.1330	0.3180		1.2640	0.4010	***	1.0170	0.3590	***	1.0990	0.3630	***
q7a_a_Bank_loan_application																			
	d2_Independent	0.2690	0.0258	***	0.2720	0.0257	***	0.2720	0.0257	***	0.2700	0.0258	***	0.2710	0.0257	***	0.2710	0.0257	***
	q2_a_Change_Turnover	0.0987	0.0116	***	0.1000	0.0115	***	0.1000	0.0115	***	0.0995	0.0116	**	0.0999	0.0115	**	0.0999	0.0115	***
	q2_e_Change_Profit	-0.1360	0.0119	***	-0.1350	0.0120	***	-0.1350	0.0120	***	-0.1360	0.0120	***	-0.1350	0.0120	***	-0.1350	0.0120	***
	_cons	-1.2650	0.0243	***	-1.2670	0.0241	***	-1.2670	0.0241	***	-1.2650	0.0243	***	-1.2660	0.0242	***	-1.2660	0.0242	***

Table 8 – Regression more than 75% of the credit obtained

Variables presented in the table include: dummy partial credit obtained (more than 75%); dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); dummies for finance sources (use of retained profits, trade credit, leasing, equity); credit access BLS coefficient, GDP growth, inflation rate, unemployment rate, Herfindahl-Hirschman Index of bank concentration; coefficients for strength of the legal system, number of procedures, length of the proceeding and its cost.

Sig.: * <.1; ** .05 <; *** <01

		Specification G			Specification H			Specification I			Specification J			Specification K			Specification L		
		Number of obs		11021	Number of obs		11021	Number of obs		11021	Number of obs		11021	Number of obs		11021	Number of obs		11021
		LR chi2(21)		279.26	LR chi2(22)		312.96	LR chi2(22)		295.73	LR chi2(22)		287.18	LR chi2(22)		340	LR chi2(22)		323.79
		Prob > chi2		0	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000
		Pseudo R2		0.0443	Pseudo R2		0.0496	Pseudo R2		0.0469	Pseudo R2		0.0455	Pseudo R2		0.0539	Pseudo R2		0.0513
Bank_loan_obtained more 75%		**Coef.**	**Std. Err.**	**P>z**	**Coef.**	**Std. Err.**	**P>z**	**Coef.**	**Std. Err.**	**P>z**	**Coef.**	**Std. Err.**	**P>z**	**Coef.**	**Std. Err.**	**P>z**	**Coef.**	**Std. Err.**	**P>z**
Firm Char.	Micro	-0.4706	0.1315	***	-0.4755	0.1316	***	-0.4645	0.1316	***	-0.4903	0.1318	***	-0.4559	0.1319	***	-0.4627	0.1318	***
	Small	-0.3191	0.1168	***	-0.3242	0.1169	***	-0.3072	0.1169	***	-0.3409	0.1171	***	-0.2926	0.1173	**	-0.2986	0.1171	**
	Medium	-0.2182	0.1146	*	-0.2382	0.1149	**	-0.2181	0.1148	*	-0.2258	0.1147	**	-0.2077	0.1151	*	-0.2065	0.1150	*
firm age	<2 years	-0.4169	0.4234		-0.3759	0.4243		-0.4145	0.4237		-0.4317	0.4234		-0.3459	0.4248		-0.3998	0.4240	
	between 2 and 5 years	-0.0240	0.1599		-0.0220	0.1600		-0.0359	0.1600		-0.0128	0.1601		-0.0185	0.1602		-0.0276	0.1601	
	between 5 and 9 years	0.0137	0.1120		0.0022	0.1122		0.0048	0.1121		0.0172	0.1120		0.0085	0.1123		0.0081	0.1122	
firm finance	Retained_earnings	-0.0318	0.0767		-0.0014	0.0769		-0.0052	0.0769		-0.0259	0.0768		-0.0080	0.0769		-0.0154	0.0768	
	Trade_credit	0.2410	0.0739	***	0.1907	0.0743	***	0.2118	0.0742	***	0.2460	0.0740	***	0.1512	0.0746	**	0.1522	0.0749	**
	Leasing	0.2525	0.0739	***	0.2891	0.0743	***	0.2754	0.0741	***	0.2526	0.0740	***	0.3037	0.0743	***	0.2942	0.0741	***
	Equity	0.2385	0.1202	**	0.2931	0.1208	**	0.2799	0.1207	**	0.2099	0.1206	*	0.2775	0.1205	**	0.2982	0.1206	**
	Semester	included in the regressions																	
Economic Environment	Credit_Access (BLS by ECB)	-0.0066	0.0046		-0.0119	0.0045	***	-0.0057	0.0045		-0.0081	0.0047	*	0.0002	0.0045		0.0003	0.0046	
	GDP	-0.0185	0.0171		0.0366	0.0199	*	0.0301	0.0212		-0.0370	0.0182	**	0.0729	0.0211	***	-0.0088	0.0175	
	Inflation	0.2369	0.0422	***	0.1728	0.0446	***	0.1944	0.0438	***	0.2666	0.0431	***	0.2141	0.0431	***	0.2617	0.0420	***
	Unempl_Overall	0.0521	0.0063	***	0.0629	0.0066	***	0.0539	0.0063	***	0.0658	0.0080	***	0.0753	0.0071	***	0.0701	0.0070	***
	HHI (Bank concentration)	0.8651	0.5859		2.1958	0.6247	***	1.8912	0.6325	***	0.5855	0.6172		2.1240	0.5941	***	2.2761	0.6200	***
Legal effectiv.	Strength_legal_sys				-0.1547	0.0265	***												
	Pro_Protect							-0.0148	0.0036	***									
	N_procedures										-0.0276	0.0097	***						
	Time													0.1113	0.0001	***			
	Cost_perc																0.0480	0.0072	***
	_cons	-3.9255	0.1869	***	-3.0660	0.2343	***	-2.8210	0.3238	***	-3.2254	0.3070	***	-4.9050	0.2353	***	-5.2991	0.2881	***

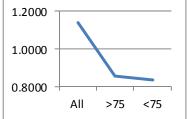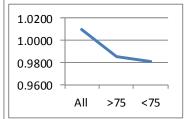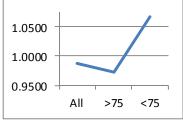## Table 9 – Regression (less than 75% of credit obtained)

Variables presented in the table include: dummy partial credit obtained (less than 75%); dummies for firm size (Micro, small, medium and large firms); dummy for independent firms; change in turnover (reduction -1, unchanged 0, increase, 1); dummy for age (less than two years, two to five years, five to nine years, more than nine years); dummies for finance sources (use of retained profits, trade credit, leasing, equity); credit access BLS coefficient, GDP growth, inflation rate, unemployment rate, Herfindahl-Hirschman Index of bank concentration; coefficients for strength of the legal system, number of procedures, length of the proceeding and its cost.

Sig.: * <.1; ** .05 <; *** <01

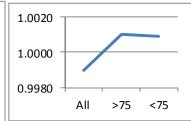|		Specification M			Specification N			Specification O			Specification P			Specification Q			Specification R		
		Number of obs		12504	Number of obs		12504	Number of obs		12504	Number of obs		12504	Number of obs		12504	Number of obs		12504
		LR chi2(21)		493.41	LR chi2(22)		570.43	LR chi2(22)		550.74	LR chi2(22)		575.39	LR chi2(22)		564.18	LR chi2(22)		542.05
		Prob > chi2		0	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000	Prob > chi2		0.0000
		Pseudo R2		0.0518	Pseudo R2		0.0599	Pseudo R2		0.0579	Pseudo R2		0.0604	Pseudo R2		0.0593	Pseudo R2		0.0569
Bank_loan_less_75%_obtained		Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z	Coef.	Std. Err.	P>z
Firm Char.	Micro	0.0863	0.1066		0.0943	0.1068		0.0983	0.1069		0.1260	0.1070		0.1058	0.1069		0.0970	0.1069	
	Small	0.1272	0.0983		0.1317	0.0986		0.1398	0.0985		0.1712	0.0988	*	0.1538	0.0987		0.1459	0.0986	
	Medium	0.0544	0.0978		0.0444	0.0981		0.0547	0.0980		0.0731	0.0982		0.0699	0.0981		0.0668	0.0981	
firm age	<2 years	0.0588	0.1938		0.0990	0.1950		0.0289	0.1947		0.1149	0.1953		0.0933	0.1952		0.0485	0.1947	
	between 2 and 5 years	0.0485	0.1087		0.0251	0.1091		0.0243	0.1091		-0.0164	0.1097		0.0282	0.1091		0.0250	0.1090	
	between 5 and 9 years	0.1174	0.0829		0.0717	0.0836		0.0889	0.0833		0.0765	0.0836		0.0947	0.0833		0.1047	0.0831	
firm finance	Retained_earnings	0.0828	0.0585		0.1327	0.0588	**	0.1191	0.0587	**	0.0917	0.0585		0.1169	0.0586	**	0.1033	0.0585	*
	Trade_credit	0.4900	0.0578	***	0.4329	0.0581	***	0.4441	0.0581	***	0.4657	0.0581	***	0.4095	0.0585	***	0.4122	0.0587	***
	Leasing	0.0931	0.0580		0.1373	0.0584	**	0.1379	0.0584	**	0.1122	0.0582	*	0.1405	0.0584	**	0.1279	0.0582	**
	Equity	0.2726	0.1060	***	0.3404	0.1067	***	0.3338	0.1066	***	0.3562	0.1067	***	0.3044	0.1065	***	0.3221	0.1066	***
	Semester								included in the regressions										
Economic Environment	Credit_Access (BLS by ECB)	0.0132	0.0034	***	0.0079	0.0033	**	0.0146	0.0033	***	0.0147	0.0033	***	0.0196	0.0034	***	0.0197	0.0034	***
	GDP	-0.0754	0.0130	***	-0.0144	0.0152		-0.0161	0.0157		-0.0238	0.0145		-0.0025	0.0158		-0.0667	0.0133	***
	Inflation	-0.0391	0.0308		-0.1509	0.0340	***	-0.1184	0.0329	***	-0.1029	0.0329	***	-0.1032	0.0319	***	-0.0387	0.0303	
	Unempl_Overall	0.0551	0.0048	***	0.0653	0.0050	***	0.0554	0.0049	***	0.0242	0.0059	***	0.0713	0.0053	***	0.0696	0.0054	***
	HHI (Bank concentration)	-2.3563	0.6095	***	-1.2637	0.6330	**	-1.2182	0.6371	*	-1.0587	0.5667	*	-1.5302	0.6204	**	-1.2046	0.6247	*
Legal effectiv.	Strength_legal_sys				-0.1739	0.0197	***												
	Pro_Protect							-0.0198	0.0026	***									
	N_procedures										0.0649	0.0074	***						
	Time													0.0937	0.0001	***			
	Cost_perc																0.0389	0.0056	***
	_cons	-2.9423	0.1432	0	-1.8562	0.1866	***	-1.3978	0.2462	***	-4.7185	0.2523	***	-3.6083	0.1675	***	-3.9966	0.2132	***

Table 10 – Change in the coefficients

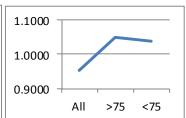| DV	IVs									
	Strength_legal_sys		Pro_Protect		N_procedures		Time		Cost_perc	
All	1.1400	0.0150	1.0100	0.0010	0.9870	0.0040	0.9990	0.0001	0.9522	0.0030
>75	0.8566	0.0225	0.9852	0.0030	0.9727	0.0090	1.0010	0.0001	1.0490	0.0070
<75	0.8340	0.0160	0.9803	0.0020	1.0670	0.0077	1.0009	0.0001	1.0390	0.0050

Table 11 – Economic impact of the quality of the legal system on the probability of obtaining a bank loan

	Min	Max	From Min to Max
Strength of the legal system	(IT=3)	(IE=9)	
	58.7%	75.9%	29%
Property protection	(IT=50)	(FI/NL/DE=90)	
	60.3%	71.7%	19%
Number of Procedures	(ES=41)	(IE=21)	
	64.6%	70.2%	9%
Time	(IT=1210)	(FI=235)	
	53.7%	75.0%	40%
Cost	(IT=29.9)	(FI=13.3)	
	55.0%	73.3%	33%
Weak legal system	(IT=1.9965)	(IE=-1.3421)	
	57.3%	73.3%	28%

Andrea Moro
Cranfield School of Management, Cranfield University, Bedford, United Kingdom;
e-mail: andrea.moro@cranfield.ac.uk

Daniela Maresch LL.M.
Institute for Innovation Management, JKU Linz, Austria;
e-mail: daniela.maresch@jku.at

Annalisa Ferrando
European Central Bank, Frankfurt am Main, Germany;
e-mail: annalisa.ferrando@ecb.int