Working Paper Series

Andrea Moro, Daniela Maresch,
Annalisa Ferrando, Gregory F. Udell

Does employment protection
legislation affect credit access?
Evidence from Europe

Abstract

We investigate the impact of employment protection on firms' credit access by looking at both credit obtained from banks and firms' decision to apply for a loan. We find that greater flexibility in structuring the employees' working hours and in dismissing employees increases the probability that firms obtain credit and that greater flexibility in dismissing employees decreases the probability that firms are discouraged from applying for credit. However, our findings also reveal that firms perceive regulations providing flexibility with regard to the employees' working hours differently from banks, leading to a situation in which firms are more likely to be discouraged from applying for a loan, even though the probability to obtain a loan increases. Our results are robust to confounding, endogeneity, selection bias as well as to alternative specifications.

Keywords: *Credit Access, Discouraged Borrower, Employment Protection Legislation, Labour Market*
JEL Classification*: D22, G21, G32, J41*

Non-technical summary

Researchers have devoted considerable efforts to investigate the factors that impact firms' capital structure. In recent years, employment protection legislation has been considered to be one of these factors. In particular, employment protection legislation has been found to impact on firms' preferred leverage by crowding out financial leverage.

In this paper we aim to advance the understanding of the role of employment protection legislation in firms' ability to increase financial leverage. We argue that a higher level of employment protection legislation may reduce firms' flexibility to adapt to changing business conditions, as it decreases their ability to deploy staff at discretion and to lay off personnel in case of financial distress. The reduction in firms' flexibility indirectly makes labour costs more rigid: as in the context under examination (the European Union) employees are senior to other claimants, the cash flow available to other creditors, such as banks, decreases. Thus, banks are expected to attribute a higher credit risk to firms located in countries with a higher level of employment protection legislation and to be less willing to provide credit. In addition, firms' managers are expected to anticipate such behaviour from banks and thus be more likely to be discouraged from applying for a loan.

We base our research on a sample euro area firms that participated at the ECB/European Commission Survey on the Access to Finance in the period 2009-2014. In the survey, firms are interviewed about their access to bank loans, their use of alternative sources of finance as well as finance and liquidity constraints. We integrate this dataset with information on employment protection legislation in the respective countries obtained from the World Bank. We focus on regulations that impact either the on-going employment (i.e., flexibility in structuring the employees' working hours) or regulations that influence the termination of the employment (i.e., requirements with regard to employees' dismissal).

Using logistic regressions we find that regulations that allow for greater flexibility in structuring employees' working hours or dismissing employees tend to increase access to credit and reduce the probability to be discouraged borrowers. However, our findings reveal differences in the determinants of

the banks' decision not to provide credit and the firms' decision to be discouraged from applying for a loan due to fear of rejection. As a consequence, firms might apply for a loan because they believe that a specific employment protection provision fosters credit access, even though this provision reduces their probability to obtain a loan from the bank. These econometric results are corroborated by several robustness tests that control for the impact of the financial crisis, selection bias and endogeneity issues.

Our paper contributes to the policy discussion on the importance of flexible employment protection regulations for a firm's credit access, which, in turn, facilitates firms' growth. The important policy implications of our findings are reinforced by the context under examination, i.e. the European Union – an area where fundamental freedoms, such as the free movement of goods and services, prevent protectionist policies. Firms located in countries with more flexible employment protection regulations may thus have a competitive advantage vis-à-vis firms located in countries with less flexible employment protection regulations.

Introduction

The capital structure of firms is not only the result of firms' preferred leverage (demand side), but also of firms' ability to increase their leverage (supply side) (Faulkender and Petersen, 2006). Employment protection legislation has been found to impact firms' preferred leverage by crowding out financial leverage (Serfling, 2016; Simintzi et al., 2015). Our paper aims to advance the understanding of the role of employment protection legislation in firms' ability to increase their leverage.

We argue that employment protection legislation may affect firm access to credit by increasing a bank's credit risk in lending to an affected firm. A higher level of employment protection legislation reduces firm flexibility in adapting to changing business conditions by decreasing a firm's ability to use discretion in deploying staff and decreasing its ability to lay off personnel in times of financial distress. As a consequence, firms' adjustment costs increase. In addition, the reduction in firms' flexibility indirectly makes labour costs more rigid (Serfling, 2016). In our context - the European Union - employees are senior to other claimants decreasing the cash flow in some states of nature that is available to other creditors, such as banks. Thus, banks are expected to attribute a higher credit risk to firms located in countries with a higher level of employment protection legislation and to be less willing to provide credit.

We empirically test this hypothesis by analysing the determinants of credit access using cross-country firm-level data from European Central Banks Survey on the Access to Finance (SAFE). In this survey, firms are interviewed at semi-annual intervals about their access to bank loans, their use of alternative sources of finance as well as finance and liquidity constraints. We rely on 87,825 complete observations of firms in ten European countries for the period from 2009 to 2014, of which 21,332 observations are from firms that applied for a bank loan. We integrate this dataset with information on employment protection legislation in these respective countries obtained from the World Bank. In additional Logit regressions we consider the possibility that the impact of employment protection legislation might differ across various industries. Specifically, we re-estimate our regressions using the

original variable and its interaction with a dummy that identifies the industry.

We also perform several robustness checks. First, our research might suffer from endogeneity, as employment protection legislation might be affected by the power of the unions. Such an effect might be greater for larger firms where employees are typically better organized and where firms often have to follow more rigid employee protection regulations. In order to address this issue, we re-estimate our original regressions by instrumenting the independent variables using the level of unionisation of a country interacted with whether the firm is medium-sized or large. Second, although our sample comprises firms that apply for a loan and firms that do not apply for a loan (which we deal with separately), we cannot rule out that our results are affected by selection bias. Thus, we re-test our findings by applying Heckman selection (Heckman, 1979), relying on a selection process that is based on the change in turnover and the change in profit similar to Moro et al. (2016). We also re-estimate our model by including additional controls (e.g., industry) and evaluate whether the results might be affected by the financial crisis and the sovereign debt crisis.

We obtain robust results that suggest that employment protection legislation plays an important role in facilitating credit access. The regulations that provide firms with greater flexibility in structuring the employees' working hours (for instance by limiting restrictions on night work) increase the probability of obtaining credit. In addition, we find that the probability of obtaining credit decreases with the length of the "notice period" (the notification lead time required for employee termination) applied to employees with 1-5 years of tenure. This result does not hold, however, for the notice period applied to employees with five or more years of tenure, possibly because firms' need to lay off unsuitable employees and the benefits they derive from it decrease over the duration of the employment. The probability of obtaining credit decreases if a third party is required to approve the dismissal of a redundant employee, whereas the requirement to notify a third party before the dismissal does not affect firm credit access. Regarding a firm's decision not to apply for a loan, we find mixed results for the relationship between firm flexibility in structuring employee working hours and the probability of being a discouraged borrower. Whereas the flexibility to extend employees' working hours for seasonal needs

reduces the probability being a discouraged borrower, restrictions on weekly holidays increase the probability of being a discouraged borrower. Moreover, the probability of being discouraged increases with the length of the notice period applied to employees with 1 and 5 years of tenure. In line with our findings on obtaining credit, the third party approval requirement for worker dismissal increases the probability to be a discouraged borrower.

To the best of our knowledge, this work is among few to empirically investigate the role of employment protection legislation in determining the *supply* of debt capital. Our results contribute to two streams of research. First, this paper adds to the growing body of literature on employment protection and financial policies (Agrawal and Matsa, 2013; Berk et al., 2010; Kim, 2015; Kuzmina, 2013; Schmalz, 2015; Serfling, 2016; Simintzi et al., 2015). These studies highlight the relationship between the demand side of the firm's capital structure decision (i.e., the demand for debt capital) and the human costs of bankruptcy, collective bargaining, the size of the labour market, unionization, and firing costs. In contrast, we investigate the relationship between firms' access to credit, - the *supply* of debt capital - and restrictions on structuring the employees' working hours as well as on the dismissal of employees. Second, this paper contributes to the literature on the determinants of access to finance (Berger and Udell, 1995; Elsas, 2005; Kysucky and Norden, 2014; Liberti and Mian, 2009; Moro and Fink, 2013; Neuberger et al., 2008; Petersen and Rajan, 1994), by expanding the literature that looks at the impact of legal regulations on credit access (Bae and Goyal, 2009; Chava et al., 2009; Cho et al., 2014; Laeven and Majnoni, 2005; Moro et al., 2016; Qian and Strahan, 2007; Tang et al., 2016). The latter studies show that credit access can depend on the quality of the legal system, in particular on the quality of shareholder rights, creditor protection and judicial enforcement. Building on this research, our paper provides insights into how employment protection legislation affects credit access.

In addition to our contribution to research, our paper also contributes to practice and policy. By investigating both the probability of obtaining credit and the probability of being discouraged from applying for a loan, we are able to highlight differences between the perceptions of banks and firms regarding, for example, the relevance of flexibility in structuring the employees' working hours for credit

access. Further, our findings inform policy makers about the importance of flexible employment protection regulations in determining firm access to credit, which, in turn, facilitates firms' growth. The policy implications of our findings are particularly important in the context of the European Union (our setting) where there is fundamental freedom of circulation of goods: firms located in countries with more flexible employment protection regulations may have a competitive advantage vis-à-vis firms located in countries with less flexible employment protection regulations, as the latter cannot be protected via trade barriers.

The paper is organized as follows: Section 2 develops the hypotheses. Section 3 discusses the dataset as well as the methodology and describes the variables used in the analysis. Descriptive statistics are provided in Section 4. In Section 5 we present the econometric findings regarding the impact of employment protection regulations on obtaining credit and the submission of loan applications, further analysis regarding the role of industry, and robustness checks. In section 6 we discuss our findings. Section 7 concludes.

2. Development of Hypotheses

Researchers have devoted considerable effort to investigating the factors that impact a firm's capital structure. In recent years, employment protection legislation has been found to be one of these factors. Simintzi et al. (2015) find a negative relationship between reforms that increase employment protection and the amount of leverage in firms' capital structure, suggesting that employment protection crowds out financial leverage by increasing operating leverage. Further, Serfling (2016) explores how an increase in employee dismissal costs driven by the adoption of employment protection laws affects a firm's capital structure decision. His results also suggest that higher dismissal costs increase the costs of financial distress and reduce debt ratios. While these empirical studies focus on employment protection legislation as a factor that impacts firms' demand for debt, Faulkender and Petersen (2006) argue that firm's capital structure is not only a function of its demand for debt, but also of its ability to access debt. In order to obtain a clearer picture of how employment protection legislation affects firm capital structure,

we will examine its impact on credit access.

Employment protection legislation may affect credit access by increasing the credit risk of loans extended by banks that are lending to firms in these countries. A higher level of employment protection makes it more difficult for firms to manage their work force (Blanchard and Portugal, 2001), thereby increasing their adjustment costs (Nickell, 1978). In turn, higher adjustment costs make firms less likely to respond to the business cycle by hiring or dismissing employees (Kugler and Pica, 2008; Messina and Vallanti, 2007), which indirectly makes labour costs more rigid (Serfling, 2016). Due to these two interrelated effects, firms located in countries with higher employment protection will find it more difficult to structure their employees' working hours as needed and to lay off employees in order to compensate for lower cash flows in times of financial distress. The inability to lay off employees when cash flow is low effectively creates a fixed cost that will be incurred irrespective of the firm's performance. This increases the firm's risk of financial distress and the likelihood of problems in repaying its bank loans. Anticipating these effects, banks will attribute a higher default risk to firms located in countries with higher levels of employment protection. Thus, a higher level of employment protection should reduce firm access to credit due to the higher credit risk associated with increased adjustment costs and lower flexibility in reacting to economic downturns. In addition, Cingano et al. (2010) and Calcagnini et al. (2014) show that firms with insufficient access to credit in high employment protection legislation environments are unable to substitute labour – the relatively expensive factor – for capital. Consequently, the negative effect of employment protection legislation on productivity and investment is reinforced among firms that are financially constrained.

However, employment protection legislation comprises a large number of different regulations that may impact both on-going employment and employment termination. In our analysis we will investigate on-going employment regulations related to flexibility in structuring the employees' working hours and employment termination regulations related to employee dismissal. Specifically, we consider three specific types of restrictions, one related to on-going employment and two related to employee dismissal. We structure our hypotheses on two dimensions: how these restrictions affect the probability of

obtaining credit, and how these restrictions might discourage a firm from applying for a loan. Turning to the first type we consider a number of different restrictions on the number of working hours. Restrictions on night work, for example, might make it difficult for manufacturing firms to react to a sudden increase in demand or for trading firms to enter markets in different time zones. Greater flexibility in structuring employees' working hours will reduce adjustment costs associated with hiring or dismissing employees, and enhance a firm's ability to adapt employee working patterns to a changing business environment.[1] This leads to the following hypothesis regarding the probability of obtaining credit:

> **H1a:** The greater the firm's flexibility in structuring the employees' working hours, the higher the probability that firms obtain credit.

The termination of employment requires that several procedural regulations, such as notice periods or the notification and/or the approval of third parties, are adhered to. While these regulations do not directly entail costs for the firms, they make the termination process longer and more complex and may therefore indirectly increase firms' adjustment costs and reduce their flexibility. As far as the notice period is concerned, the shorter it is, the easier it is for firms to adjust their workforce in response to an economic shock, organisational changes, employee performance or disciplinary issues. Therefore, we argue that a shorter notice period reduces firms' adjustment costs and improves flexibility, which, in turn, decreases the banks' risk that firms default on the loan. As a consequence, the probability that banks provide credit to firms increases. Accordingly, we formulate the following hypothesis:

> **H1b:** The shorter the statutory notice period, the higher the probability that firms obtain credit.

In addition, we investigate how the involvement of third parties in the termination process impacts the firm's probability of obtaining credit. Employment protection legislation may stipulate that third

---

[1] Restrictions on night work, for example, might make it difficult for manufacturing firms to react to a sudden increase in demand or for trading firms to enter markets in different time zones.

parties, such as government agencies or unions, have to be notified or have to approve an employee's layoff. In this case, a party outside the firm, which typically has little or no knowledge of the firm, has the right to be actively involved in one of the firm's core strategic decisions, namely its human resource management. While this provision aims to protect the employee from wrongful dismissal, it might not always allow the firm to employ the best person for the job, as it might be forced to continue an inadequate employment relationship if the third party denies its approval. Even if the involvement of a third party leads to constructive negotiations between the firm and the third party, where both the firm's and the employee's interests are taken into consideration, the time period between the firm's intention to dismiss the employee and the third party's decision to approve or disapprove of the dismissal might be long and unpredictable. This scenario decreases firms' flexibility and increases their adjustment costs. Thus, we expect banks to be less likely to grant credit in an environment where third parties are necessarily involved in the dismissal process. On the basis of these arguments, we propose the following hypothesis:

> **H1c:** When the dismissal of an employee requires the involvement of a third party, the probability that firms obtain credit is lower.

However, employment protection legislation may not only impact the banks' decision to grant credit, but also the firms' decision to apply for a loan. This is because firms may anticipate their banks' lending decision in order to maximize their chances of a successful application and minimize their chances (and the cost and effort) of an unsuccessful application. That is, assuming that firms can anticipate the impact of employment protection regulations on banks' lending decision, we would expect that greater flexibility in employment protection regulations would be associated with both a greater probability of obtaining credit and a lower probability of being discouraged from applying for credit. In this regard, we propose the following hypotheses:

H2a: The greater the firm's flexibility in structuring the employees' working hours, the lower the probability firms are discouraged from applying for a loan.

H2b: The shorter the statutory notice period, the lower the probability firms are discouraged from applying for a loan.

H2c: When the dismissal of one worker requires the involvement of a third party, the probability that firms are discouraged from applying for a loan is higher.

3. Data and Methodology

3.1 Data

Our analysis relies primarily on the data obtained from the Survey on the Access to Finance of Enterprises (SAFE) conducted on behalf of the European Commission and the European Central Bank (ECB). SAFE gathers facts about firms' access to finance within the European Union. It is an on-going survey that has collected data every 6 months since 2009 and systematically covers thirteen euro area countries (namely: Austria, Belgium, France, Finland, Germany, Greece, the Netherlands, Ireland, Italy, Luxemburg, Malta, Portugal and Spain). We exclude Luxemburg and Malta because of the much reduced number of observations available and Greece because of the lack of data on employment protection legislation.

Firms in the sample are randomly selected from the Dun & Bradstreet database. The sample is stratified by firm-size class, economic activity and country. The sample size for each economic activity is chosen to guarantee satisfactory representation across the four largest industries: manufacturing, 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. Also, the sample sizes are selected on the basis of representation at the country level. The specific individual that is surveyed in each firm is a top-level executive and the questionnaire is administered in the local language. Between 4,500 and 6,000 firms were interviewed in each wave. 70% of surveyed firms were present in only one wave; less than 20% were present in two consecutive waves.

In this respect, we do not have a proper panel dimension that allows us to exploit firm-level effects in our analysis, as only a very small number of firms were present in consecutive survey rounds. We end up with a dataset that contains 87,825 observations: 66,493 of these observations are firms that did not apply for a loan, and 21,332 are firms that applied for a loan in the period between spring 2009 and autumn 2014.

We combine the SAFE dataset with information from the quarterly Bank Lending Survey (BLS) collected by central banks on behalf of the ECB. The BLS contains information about the banks' lending in the past three months and the banks' propensity to lend in the next six months. It offers detailed data on the banks' propensity to lend to large and small/medium-sized firms as well as households. We include the observations on banks' lending to firms and assessment of general economic and business risks in the previous three months in order to control for credit availability in the market. We use the Eurostat homogeneous data on GDP growth and unemployment rates to control for macroeconomic conditions, and the Herfindahl-Hirschman Index of bank concentration (HHI) provided in the ECB data warehouse to control for the bank market structure. Data on employment protection legislation comes from the World Bank's Doing Business dataset on Labour Market Regulation. We note, however, that this dataset does not contain information for the entirety of our sample period in the case of the Notice period after 1 year and the Notice period after 10 years. In both cases the observations for 2009 are missing. Thus, the analyses on these variables rely on a marginally smaller dataset.

3.2 Methodology

Our analysis uses traditional logit regressions (Hosmer and Lemeshow, 2000), since the dependent variables (whether a firm obtains credit or not; whether a firm is a discouraged borrower or not) are binary. As described above, the panel dataset is unmatched at the firm level so we use pooled logit regressions. Employment protection legislation differs at the country and the industry levels. This fact can generate clustering effects on the errors of the regressions. Thus, we estimate standard errors that are robust to clustering of errors by considering 40 different clusters (ten countries and four industries in each country). Since the dataset provides weights that restore the proportions of the economic weight (in terms

of the number of employees) of each firm-size class, economic activity and country, we estimate our regressions by including these weights. 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 correlated with each other.

Employment regulation might interact with the industry, as different industrial sectors might be more or less sensitive to different aspects of employment protection legislation. Flexibility in hiring for seasonal needs might for instance be more relevant for firms that operate in industries characterised by high seasonality (e.g. tourism sector), while restrictions on night work might be more relevant for asset-intensive industries (e.g. automobile sector). In order to obtain a more granular picture of the role played by employment protection legislation, we re-estimate the original specification by including the original variable and its interaction with a dummy that identifies the industry. This analysis allows us to examine two different aspects: 1) whether there are differences regarding the role of employment protection legislation in different industries; 2) whether employment protection legislation matters over and above industry specific aspects.

In addition, we conduct a number of robustness checks in order to address selection bias, omitted controls and endogeneity. Even though our analysis of credit access considers only firms that apply for a loan and our analysis of discouraged borrowers considers only firms that do not apply for a loan, we cannot rule out the possibility that our results are affected by some kind of selection bias. Thus, we re-estimate our model implementing Heckman (1979) selection approach. We use the dataset that contains both firms that applied and firms that did not apply for a loan (up to 87,825 observations) and employ the binary response model with sample selection, where the dependent variable indicates whether or not the firm applies for a loan. The approach we follow is similar to that used by Piga and Vivarelli (2004) and Piga and Atzeni (2007). The selection equation requires at least one variable that affects the demand for a loan, but is not relevant in the main model. Due to limitations in the dataset, we rely on (i) the change in the firm's profit, and (ii) the change in the firm's turnover, an approach that is similar to that used by Moro et al., (2016). According to Myers and Majluf (1984) firms finance their activity by first using

retained profit, then reverting to debt and finally to equity. Thus, greater profit is expected to reduce the probability that firms apply for a loan. Further, larger firms, as measured by turnover, are expected to face greater financial needs and to be more likely to apply for a loan. Both variables impact on the firm's decision to apply for a loan as proven by their high correlation with the dummy variable that measures whether the firm applies for a loan. At the same time, even if they might also play a role in the bank's lending decision or in being a discouraged borrower, such a role is limited as shown by the low correlation between the two variables and the dependent variables.

In addition, we cannot rule out that our regressions might suffer from endogeneity in the sense that by looking at employment protection legislation we in fact investigate the power of unions in larger firms, as unions try to influence employment protection regulations in order to protect the interest of employees, particularly in larger firms. In order to address this issue we re-estimate our model by instrumenting our independent variables with the level of unionisation of a country (measured as the percentage of workforce that is member of a union) and by interacting it with firm-size classes. The reasoning is that the greater the share of employees who are members of unions, the greater the power unions have and the greater their ability to influence regulations. Moreover, employees are typically better organized in larger firms, implying that unions' role will be more relevant in this case. If the instrumented variables are significant, this will mean that our dependent variables in fact measure the role of unions and not of employment protection legislation. At the same time, if the instrumented variables turn out to be not significant, this will mean that our analysis does not suffer from endogeneity issues.

3.3 Dependent Variables

In order to examine the probability that firms obtain credit, we rely on one of the questions asked in the SAFE, namely whether the firms obtained the credit they applied for in the last six months. We use the answer to this question (the firm obtained the credit = 1; the firm did not obtain the credit = 0) as our first dependent variable.

However, firms might not even get the opportunity to obtain credit, as they decide not to apply for credit for fear of being rejected by the bank (discouraged borrowers). Thus, firms can also suffer from a

lack of credit access due to self-selection. The SAFE dataset also collects information about this aspect, as it asks the firms that did not apply for a loan if they did not apply because they anticipated a rejection from the bank. We use the answer to this question (the firm is a discouraged borrower = 1; the firm is not a discouraged borrower = 0) as our second dependent variable.

3.4 Independent Variables

We use different independent variables for testing each of our three hypotheses. H1a and H2a are tested with three variables. The first variable looks at the possibility to extend the workweek to 50 hours per week for 2 months each year to respond to seasonal increase in demand. This flexibility makes it easier for the firm to structure the employees' workweek so that seasonal variations can be met, which decreases adjustment costs. As a consequence, we expect banks to assess credit risk as lower for, and to be more willing to lend to, firms operating with this flexibility. The variable is a dummy that equals 1 if the firm has the possibility to extend the workweek and 0 otherwise. The second variable reflects restrictions on night work. It is a dummy that equals 1 if there are restrictions on night work and 0 otherwise. Limitations on night work lower the firm's ability to adapt its employees' workweek to the level of its business activity and therefore increase adjustment costs. Thus, we expect these restrictions to adversely affect access to credit. The third variable looks at restrictions on weekly holidays. This variable is also a dummy that takes a value of 1 if there are restrictions and 0 otherwise. If employees can be restricted in taking holidays during the week, the firm will be able to respond to changes more easily and will therefore have lower adjustment costs. This should increase access to credit.

To test H1b and H2b we use continuous variables for the length of the notice period for an employee with one year, five years and ten years of tenure. All variables are expressed in weeks of salary. If a firm can easily lay off unsuitable employees due to a short notice period, it will be able to reduce its adjustment costs. We therefore expect that short notice periods facilitate access to credit. Because of a lack of observations for the year 2009 in the case of notice period after one year and notice period after ten years, the regressions are estimated using only 60,881 observations in the case of firms that did not apply for a loan and 19,746 in the case of firms that applied for a loan.

H1c and H2c are tested using three variables for the obligation to involve third parties in dismissing one or more employees. We use (i) the obligation to notify a third party for one dismissal, (ii) the obligation to notify a third party for a dismissal of nine or more employees, and (iii) the obligation to get a third party's approval for one dismissal. All variables are dummies, with 1 indicating that an obligation exists and 0 indicating that the obligation does not exist. We expect that obligations to involve third parties make the termination process more complex and time-consuming, which increases adjustment costs and decreases the probability of obtaining credit.

3.5 Controls

We include a set of controls for firm characteristics, the economic context and the moment in time when the data was collected. In terms of firm characteristics, the SAFE dataset provides some information about the size of the firms by clustering them into the following categories: micro, small, medium-sized and large. We use three dummy variables that identify micro, small and medium-sized firms. Our expectation is that micro and small firms are more likely to face a rejection, since they are supposedly less solid and successful. As firms anticipate banks' lending decisions, micro and small firms are also more likely to be discouraged borrowers.

Firms are clustered according to four age categories: younger than two years, between two and five years, between five and nine years, and older than nine years. We use Firms up to 2 years, Firms between 2 and 5 years, and Firms between 5 and 9 years as dummy variables to identify the age group. Older firms are more likely to be successful in applying for a loan (Berger and Udell, 1995; Petersen and Rajan, 1994) since they have an established reputation that banks rely on when taking lending decisions (Martinelli, 1997). We control for the change in labour costs. This is a categorical variable, which takes a value of -1, if the firm faces a reduction in labour costs, 0, if there is no change, and +1, if there is an increase.

Regarding the financial strategy of the firms, we include dummies that identify different sources of finance used: trade credit (TRADE_CREDIT), leasing and factoring (LEASING_AND_FACTORING), retained earnings (RETAINED_EARNINGS) and additional equity

(EQUITY).

Since the independent variables are time-invariant at country level, we do not include any control for the country. However, we consider a set of macroeconomic variables that are country-specific and time-varying to capture the macroeconomic context in which the firms operate. In particular, we include the change in the GDP and the unemployment rate. Additionally, we include the market structure of the financial industry by using the Herfindahl-Hirschman Index (HHI) of bank concentration in each country, as previous research suggests an impact of bank competition on credit access (Carbó-Valverde et al., 2009; Neuberger et al., 2008). Moreover, we account for the financial context by including the index that measures industry risk as perceived by banks and the European Central Bank's BLS coefficients for small/medium-sized firms. The BLS index measures if banks apply more rigid rules for the provision of credit (positive values) or more lenient ones (negative values). This control allows for the credit made available to firms by the bank system.

The dataset provides unmatched observations for twelve semesters (2009-2014). Thus, we use eleven dummies that identify the semester in which the data was collected.

4. Descriptive Statistics

The dataset used contains 87,825 complete observations from ten countries for the period between the first semester of 2009 and the second semester of 2014. The dataset is reduced to 21,332 observations when only the firms that applied for a loan are considered. The difference can be attributed either to firms that did not need finance (and, thus, did not apply for a loan) or to firms that were discouraged from applying for a loan (i.e., firms that needed a loan, but did not submit an application, because they feared that it would be rejected). Additional detailed information about country (and time) variation of the independent variables is reported in the appendix.

Figure 1 reports the loan applications, the success in applying for a loan as well as the percentage of discouraged borrowers in the ten countries considered in our research.

[FIGURE 1A]

[FIGURE 1B]

The summary statistics on 87,825 observations are reported in Table 1A.

[TABLE 1A]

The majority of the firms are SMEs (68%) and more than 77% are older than 9 years. In terms of financing, firms appear to use leasing and trade credit quite intensively. The BLS coefficient is positive (3.6), implying that, on average, the bank system is tightening credit standards and hence is reducing the provision of credit.

As far as the flexibility in structuring the employees' working hours is concerned, almost 82% of the firms enjoy flexibility in extending the workweek for seasonal needs, while only 39% face restrictions on night work. Interestingly, only in 25% of the cases do limitations on employees' weekly holidays exist. The notice periods vary and increase with the employee's tenure, ranging from a minimum of 1.36 months (after one year of continuous employment) to a maximum of 17.33 months (after more than ten years of continuous employment). The average length of notice period goes from 4.26 months in case of one year of tenure to almost 10.6 months in case of more than ten years of tenure. The involvement of third parties in the dismissal process presents a quite heterogeneous picture: while 69% of the firms have to notify a third party in case of a single dismissal, approximately 97% of the firms have to notify a third party for a collective dismissal. The approval for a dismissal is needed in 6% of the firms in the sample.

Moving from the overall dataset to the sub-sample which considers only firms that actually applied for a loan, it can be seen that in this group there are relatively less micro firms and more large firms and, overall, these firms report more often to have used internal funds as well as the various sources of external finance (Table 1B).

[TABLE 1B]

As far as employment protection regulations are concerned the picture is slightly different. The share of firms facing restrictions on night work goes up to 41%, whereas the share of firms that may extend the workweek for seasonal needs goes down to 79%. At the same time, the proportion of firms that may restrict weekly holidays increases to 27%. In terms of notice period there are no major differences. The

same is true for the proportion of firms that have to notify to third parties in case of a single or collective dismissal. However, the share of firms that has to obtain the approval of a third party in order to dismiss an employee declines to 3.4%.

Regarding firms that did not apply for a loan (Table 1C), there are proportionately slightly more micro firms than in the entire sample. There are no major changes in the employment protection regulations: the proportion of firms that face restrictions on night work or weekly holidays or that are flexible to extend the workweek for seasonal needs is very close to that of the entire dataset. Also the lengths of notice periods are very close to the ones in the entire dataset and the same applies to the share of firms that has to involve third parties in the termination process.

[TABLE 1C]

5. Results

The analysis is split into two stages: first, we focus on the impact of employment protection legislation on the probability of obtaining credit; second, we analyse whether employment protection legislation discourages firms from applying for a loan. Further analyses and robustness checks are presented in separate subsections.

5.1 Employment Protection Legislation and Obtaining Credit

The results regarding the impact of flexibility in structuring the employees' working hours on obtaining credit from the bank are reported in table 2A.

[TABLE 2A]

The first regression (Model 1) reports the results linked to the flexibility of extending the workweek for seasonal needs. While flexibility is significant its sign is negative. That is, flexibility in extending the workweek for seasonal needs reduces the probability of obtaining credit inconsistent with H1a. One explanation is that greater flexibility causes operational problems or increases administrative burdens (Maxwell et al., 2007) which could, in turn, impact on the quality of management. Further, extending the workweek for seasonal needs might deteriorate employee working conditions, as longer

working hours increase occupational injuries and illnesses (Dembe et al., 2005). As a consequence, the firm's risk profile could increase, thereby making banks more reluctant to provide credit. The size of the firm affects its access to credit, as smaller firms are less likely to obtain credit. A similar picture can be found with respect to the age of the firm: firms younger than two years of age appear to be the ones that are least likely to obtain a loan. Regarding the source of finance used by firms, only the use of leasing/factoring and trade credit are significant and negatively related to obtaining credit. This could be consistent with lower quality and/or especially opaque firms being relying on these more expensive sources of finance. Change in labour costs is significant and positively related to obtaining credit. Economic expansion (GDP) is positively related to obtaining credit, whereas the increase in unemployment is negatively related to obtaining credit. The index that measures industry risk from the banks' point of view is not significant. As expected, the European Central Bank's BLS coefficient is negatively associated with obtaining credit.

Flexibility in Model 2 is significant and is consistent with H1a. That is, in line with our expectations, limitations on night workforce deployment decrease its flexibility and increase adjustment costs. As a consequence, banks attribute a higher credit risk to the firm and are less willing to provide credit. The controls do not reflect major differences with Model 1 in terms of sign and significance.

The last specification presented in table 2A (Model 3) focuses on the ability (i.e., the flexibility) of firms to constrain employees from taking a holiday during the week. The independent variable of interest is significant and consistent with hypothesis H1a. That is, the ability (i.e., flexibility) to limit holidays during the week improves access to finance and is therefore consistent with banks assessing lower credit risk, since firms are able to respond more easily to changes in demand. Again in Model 3 the significance and the sign of the control variables are not markedly different from the other two Models. On balance the results tend to provide support to H1a in that in two of the three models flexibility in structuring employees' working hours increases credit access.

The results regarding the relationship between the length of the notice period and the probability of obtaining credit are reported in table 2B.

[TABLE 2B]

In the first regression, Model 4, there are only 19,199 observations, since we do not have any information on the length of the notice period after one year of continuous employment for the year 2009. In this Model the key independent variable we focus on is the continuous variable that reflects the notice period for employees with one year of tenure. This variable is significant and negatively related to obtaining credit: the longer the notice period, the harder it is for firms to obtain credit. This is in line with our expectation, since longer notice periods increase the costs that firms incur before being able to end employment relationships with employees who do not match the firm's requirements. Regarding the controls included in the specification, there are no major changes in significance or sign with respect to the models presented in table 2A. Models 5 and 6 focus on the notice period for employees with five years and ten years of tenure respectively. Neither is significant suggesting that banks do not perceive longer notice periods as detrimental for employees with five/ten years of tenure, possibly because the layoff is less likely to be linked to the employee's suitability for the job. There are no changes in the significance and sign of the controls in these models. In Model 6, as in Model 4, the regression is based on a reduced number of 19,199 observations due to the lack of information on the independent variable for the year 2009. All in all, our evidence suggests that the notice period affects access to credit but this effect is limited to employees with short tenure.

The results on the relationship between the involvement of third parties and the firm's probability of obtaining credit are reported in table 2C.

[TABLE 2C]

In Model 7 third party notification for the dismissal of one employee is not significant and in Model 8 third party notification for collective dismissal is not significant. However, in Model 9 third party approval for a single worker dismissal is significant and negative. That is, the requirement that a third party must approve an employee dismissal reduces the probability that a firm can obtain credit, since it increases the firm's credit risk due to higher costs and greater uncertainty about the final outcome. There are no changes in the significance and sign of the controls in Model 9.

5.2 Employment Protection Legislation and Discouraged Borrowers

The findings regarding the impact of employment protection legislation on the probability that firms are discouraged from applying for credit for fear of rejection are reported in tables 3A, 3B and 3C.

[TABLE 3A]

Model 10 examines the role of flexibility in extending the employees' working hours for seasonal needs on being a discouraged borrower. The specification is based on 64,312 observations. Regarding our key independent variable, flexibility in extending the employee workweek for seasonal needs, the variable is significant and negatively related to being a discouraged borrower. The flexibility to adapt the workweek to the firm's seasonal needs hence lowers the probability that the firm will be discouraged from applying for a loan. This finding is in line with our expectations. Regarding controls, firm size affects the probability of being a discouraged borrower, with small firms appearing to be the most discouraged ones. The firm's age also affects the likelihood of being discouraged from applying for a loan. Firms between two and five years of age are the most discouraged ones, while firms up to two years of age are not discouraged, possibly because they have limited financial needs and therefore rely less on bank lending. Among the different sources of finance EQUITY as well as LEASING_FACTORING and TRADE_CREDIT are significantly and positively related to being a discouraged borrower. The cost of labour is negatively associated with being a discouraged borrower. Among the macroeconomic variables the change in GDP, the Herfindahl-Hirschman Index of bank concentration and the BLS index are not significant. At the same time, the unemployment rate is positively related to being a discouraged borrower.

Model 11 examines the relationship between restrictions on night work and the probability of being a discouraged borrower. The variable of interest is positive, but not significant. Qualitatively, there are no changes in the controls compared to Model 10. In the last regression presented in table 3A (Model 12) the variable of interest, restrictions on weekly holidays, is marginally significant and positive, suggesting that firms are more likely to be discouraged borrowers when they are allowed to limit the possibility of holidays during the week. A possible reason for this unexpected finding might be that firms

using this flexibility experience less motivated employees, which, as a consequence, might negatively affect their productivity and thus their probability to obtain credit. There are no changes in the sign or in the significance level of the controls in comparison with Models 10 and 11.

Table 3B presents the regressions that examine the role of the notice period on the probability that the firm is a discouraged borrower.

[TABLE 3B]

Model 13 examines the notice period after one year of tenure. The regression includes only 60,881 observations, since there is no information on the length of the notice period after one year of continuous employment for the year 2009. Turning our attention to the variable of interest, the length of the notice period for employees with one year of tenure, it is positively related to being a discouraged borrower. The longer the notice period, the higher is the probability that the firm will be discouraged from applying for a loan. There are no changes in the controls with respect to the previous regressions except for the BLS index, which used to be not significant and now turns to be (marginally) significant and negatively related to being discouraged from applying for a loan. Similar results are shown in Model 14. The notice period after five years is significant and positively related to being a discouraged borrower. Both findings are in line with our expectations. The longer the notice period for employees with one or five years of tenure, the more difficult it is for the firm to dismiss somebody who is not suited for the job, and the higher are the firm's adjustment costs. As a consequence, the firm will anticipate that it poses a higher credit risk for the bank and thus be less likely to apply for a loan. Except for the BLS index, which turns to be not significant, the regression does not present any changes in the sign and the significance of the controls as compared to Model 13. However, the results for the notice period after ten years of continuous employment presented in Model 15 differ in that the notice period after ten years is not significant.

Table 3C presents the last of our basic results. Here we examine the relationship between the involvement of third parties in the dismissal process and the probability of being a discouraged borrower.

[TABLE 3C]

Model 16 focuses on whether the firm has to notify a third party of the planned dismissal of one

employee and Model 17 focuses on third party notification for collective dismissal. As in our findings for obtaining credit (Models 7 and 8), neither are significant suggesting that the additional red tape associated with third party notification is not particularly problematic in raising firm adjustment costs and inhibiting credit access. Model 18 presents a different picture. The requirement to obtain a third party's <u>approval</u> in order to dismiss an employee negatively (and statistically) impacts the probability that a firm is a discouraged borrower (just as it negatively affects the probability of obtaining a loan when it applies (Model 9). Thus, firms perceive the stipulation that third parties, such as unions or governmental agencies, are allowed have a say in the dismissal process (i.e. in the selection or the number of people to be dismissed) as decrease in flexibility, which might adversely affect their application for a loan. Regarding controls, the only change is linked to the Herfindahl-Hirschman Index of bank concentration, which turns to be significant and negatively related to being a discouraged borrower.

5.3 Further Analysis: The Role of Industry

Our analysis relies on the joint observations of firms that belong to different industries. However, we cannot rule out the fact that the industry might impact the role that employment protection legislation plays in obtaining credit or in being discouraged from applying for a loan. For instance, both the service and the trade industry might be more sensitive to seasonal flexibility than the manufacturing industry, which might in turn be more sensitive to restrictions on night work. The service and the trade industry might also be more sensitive to the length of the notice period since they typically suffer from higher fluctuation. All in all, it is therefore necessary to examine the impact that employment protection legislation can have at industry level and, at the same time, verify whether our initial results hold.

In order to explore the importance of the firm's industry, we re-estimate the regressions by including the original independent variable, a dummy variable that identifies the industry (one at a time) as well as the interaction between the respective dummy variable and the employment protection legislation variables. We deploy this analysis only for those variables that are significant in the analyses presented in sections 5.1 and 5.2. The results on obtaining credit are reported in tables 4A, 4B and 4C. For reason of space the tables only report information about the variables of interest. There are no major

changes in the controls in the different specifications.

[TABLE 4A]

[TABLE 4B]

[TABLE 4C]

Regarding flexibility in extending the employees' workweek for seasonal reasons, the industry dummy is significant for the construction and the trade industries, whereas the interaction variable is significant for the construction (negative sign) and the manufacturing (positive sign) industries. This suggests that banks are less likely to provide credit to the construction industry if such flexibility exists, while they are more likely to provide credit to firms in the trade sector. The original non-interacted variable is always significant and negatively related to obtaining credit, suggesting that flexibility is relevant irrespective of the industry. Regarding restrictions on night work, its interactions with the industry dummies are always not significant, while the service industry dummy is significant and the trade industry dummy is marginally significant. At the same time, the original non-interacted variable is always significant and negatively related to obtaining credit, suggesting an important role for restrictions on night work over and above any industry effect. When we look at restrictions on weekly holidays, only the construction industry dummy is significant. The interaction variable is highly significant for the construction industry (positive sign) and marginally significant for the manufacturing industry (negative sign). The original non-interacted variable is always significant and positively related to obtaining credit except for the regression that includes the interaction with the construction industry, suggesting that in this specific case the provision of credit is driven mainly by factors specific to the industry. For the notice period, the industry dummies and the interaction variables are not significant. This result suggests that the role of the notice period is independent from any industry effect. Finally, we examine the role of third party approval. In this case, the interaction variables are not significant and the industry dummy is only significant in the case of the trade industry. As far as the original variable is concerned, it is always significant and retains the same sign, suggesting that third party approval plays a role over and above the industry.

The results for the role of the firm's industry and employment protection legislation on discouraged borrowers are reported in tables 5A, 5B and 5C. Also in this case, the tables report information only about the variables of interest for reasons of space. There are no major changes in the controls in the different specifications.

[TABLE 5A]

[TABLE 5B]

[TABLE 5C]

Regarding flexibility in extending the employees' workweek for seasonal needs, the original non-interacted variable is always significant, whereas its interaction with different industries it turns out to be only significant in the case of the construction industry. Among the industry dummies only the trade industry is significant. The results suggest that different industries do not play a real role. Restrictions on weekly holidays is marginally significant in the original specification (Model 12). This is confirmed when we interact the original variable with the industry dummies, as the interaction variable is only significant in case of the construction industry. This result suggests an "industry" effect of restrictions on weekly holidays. Turning our attention to the length of the notice period, the results indicate a clear role for both the notice period after one year and the notice period after five years over and above the industry. Regarding the notice period after one year, the original non-interacted variable is always significant, but neither the interaction variable nor the industry dummies are significant. These results also suggest that, as far as discouraged borrowers are concerned, the difference in industries does not play any role. Regarding the notice period after five years, only the construction industry seems to play a role, since both the construction industry dummy and the interaction with the construction industry dummy are significant. The final regressions look at the role of the obligation to obtain a third party's approval for an employee's dismissal. The original non-interacted variable is always highly significant, but only the interaction with the trade industry dummy and the manufacturing industry dummy are significant. This result suggests that even if industry plays a role, third party approval nevertheless is also relevant per se.

5.4 Robustness Checks

In this section we conduct robustness checks to rule out that our findings are affected by the financial crisis, selection bias or endogeneity issues. The financial crisis might impact both credit access and employment protection legislation. One might expect that countries like Italy or Spain, which were hit more strongly by the economic downturn, faced a greater reduction in credit access. At the same time, these countries might also be the ones, which experienced more reforms in employment protection legislation. Here we conduct additional analyses in order to explore whether this is the case. The Doing Business coefficients on employment protection legislation used are constructed on an annual basis, but do not reflect any variability during the period considered. This suggests that the countries in the sample did not implement any change in their respective employment protection regulations. Moreover, our data show a very low correlation between the firms' reliance on bank credit in a particular country (proxied by the trade credit to total liabilities ratio) and the employment protection legislation variables. We can therefore rule out confounding effects linked to simultaneous changes in credit access and employment protection legislation.

Although our analysis of the probability of obtaining credit considers only firms that apply for a loan and our analysis of the probability of being discouraged from applying for a loan considers only firms that do not apply for a loan, we cannot completely rule out the possibility that our results are affected by selection bias. Thus, we re-estimate the regressions where the employment protection legislation variables are significant by using the Heckman sample selection model (Heckman, 1979). Because of the dataset we use and the variables we employ, it is not easy to find a variable that affects the firm's decision to apply for a loan, but that does not affect the probability of obtaining credit from a bank. In that regard, as we discussed in the methodology section, we exploit firm-specific characteristics as elements that affect the firm's decision to apply for a loan (but not the probability of obtaining credit) by using variables that measure the change in turnover and the change in profit (results not reported here).

However, the regressions are significant in all specifications used. In addition, there are no major changes in the sign and the significance level of the controls. More importantly, the independent variables have the same sign and significance level as in the original regressions. All in all, we can conclude that

our original models appear not to suffer from selection bias.

As discussed in the methodology section, it could be argued that our analysis suffers from endogeneity in the sense that we are not measuring the role of employment protection legislation, but in fact the role of the power of unions in large and small firms. In order to deal with this issue we re-estimate our regressions by instrumenting the variables of interest by using a measure of union power (namely the level of unionisation in the country, measured as percentage of workers that are member of a union) and interact it with a dummy that identifies whether the firm is medium-sized or large. The interacted variable appears to be a good instrument, since it is more correlated with the independent variables than the dependent variables. If our analysis is affected by endogeneity, we should end up with instrumented variables that are significant (results not reported here). None of the variables of interest is significant when it is instrumented and this applies to both the regressions that focus on obtaining credit and those that focus on discouraged borrowers.

We also re-estimate our models controlling for the industry. In the original models the industry dummies have not been included, as we pursued more detailed analyses with the interaction variables. However, when we include the industry dummies as controls there are no changes in the significance level and sign of both controls and variables of interest.

All in all, our additional analyses and robustness checks suggest that our original findings are not affected by confounding. In addition, we provide evidence that the results are robust to sample selection, endogeneity and alternative controls variables.

5.4 Magnitude of the effects

The analyses presented above supports our argument that more rigid employment protection legislation has an impact on firms' credit access by both reducing the probability of obtaining credit and increasing the probability of being discouraged from applying for credit. However, it is also important to examine the economic impact of such statistically significant relationships. To do so, we estimated the probability of obtaining credit and being discouraged from applying for credit for each independent variable at its highest and lowest value. The results are reported in table 6A (obtaining credit) and table

6B (being discouraged from applying for credit).

[TABLE 6A]

[TABLE 6B]

Our findings suggest a considerable economic effect of employment protection legislation on the probability of obtaining credit. The probability of obtaining credit increases from 69% to 74% when firms have the possibility to extend the workweek for seasonal needs. A lack of restrictions on night work increases the probability of obtaining credit from 63% to 76%. In addition, restrictions on weekly holidays increase the probability of obtaining credit from 69% to 74%, whereas the length of the notice period increases the probability of obtaining credit from 64% (in case of the longest notice period of 6.5 months) to 73% (in case of the shortest notice period of 1 month). The obligation to get a third party's approval for one dismissal has the biggest economic effect, as the probability of obtaining credit rises from 39% (third party's approval is required) to 72% (third party's approval is not required).

When we look at the economic impact of employment protection legislation on being discouraged from applying for a loan, we find an overall reduction with less rigid employment protection. The probability of being discouraged from applying for credit decreases from 7% to 5% when firms have the possibility to extend the workweek for seasonal needs. While this is a proportionally big increase, it is nevertheless a marginal economic effect. The same applies to restrictions on weekly holidays (reduction from 6% when firms face restrictions to 5% when they do not) and for notice periods (reduction from 6% to 4% when firms have to observe shorter notice periods for employees with both 1 year and 5 years of tenure). Also with regard to being discouraged from applying for a loan, third party involvement has the biggest effect: the probability to be discouraged from applying for a loan decreases from 10% to 5% when third party approval is not required.

Overall, our results suggest that employment protection legislation has a considerable economic effect on both the probability of obtaining credit and the probability of being discouraged from applying for a loan, even though these effects are stronger with regard to the banks' decision to provide credit than the firms' decision to apply for credit. In addition, the biggest effect on constraining credit access (both in

terms of being denied credit and being discouraged from applying for credit) is the obligation to obtain a third party's approval for the dismissal of an employee. This involvement of third parties is considered extremely detrimental, possibly because it makes the termination process more complex and time-consuming.

6. Discussion

The results of the initial econometric analysis are strongly supported by the robustness checks we pursue. However, the empirical evidence deserves further elaboration.

Regulations that allow for greater flexibility in structuring the employees' working hours affect the banks' decision to lend. Interestingly, even though all three measures used are significant, flexibility in extending the employees' workweek for seasonal needs reduces the probability of obtaining credit from banks, whereas a lack of restrictions on night work and on weekly holidays increases the probability of obtaining credit. One possible explanation for this finding could be that, whereas a temporary increase in employees' weekly working hours enables firms to adapt to changes in demand without having to hire or dismiss employees, thereby reducing costs and increasing competitiveness (Corominas et al., 2004), it also complicates the firms' planning of working hours and deteriorates the employees' working conditions (Lusa et al., 2008). If banks perceive these challenges to outweigh the chances related to greater flexibility in structuring the employees' working hours, they might be reluctant to grant credit. Our results also suggest that greater flexibility in structuring the employees' working hours affects firms' decision to apply for a loan. However, while flexibility in increasing working hours for seasonal needs reduces the probability to be discouraged from applying for a loan, the effect becomes positive when restrictions on weekly holidays increase. Restrictions on night work, instead, do not impact on firms' decision to apply for credit. These results also show a clear mismatch between the firms' and the banks' interpretation of the role of employment protection legislation. First, firms are less likely to be discouraged borrowers when regulations provide the flexibility to extend the working hours for seasonal needs, while banks tend to be more rigid in providing credit in such a context. Second, firms are more likely to be discouraged borrowers when laws stipulate restrictions on weekly holidays, whereas banks

are more willing to provide credit in this case. Lastly, the results regarding restrictions on night work are mixed: whereas banks' lending decision is negatively affected by these restrictions, firms' decision to apply for a loan is not affected.

With respect to termination procedures the evidence suggests that greater flexibility in dismissing employees increases the probability to obtain credit and decreases the probability to be a discouraged borrower by indirectly reducing adjustment costs. In this case, firms and banks interpret the role of notice periods and the involvement of third parties in the dismissal process similarly. Interestingly, we find that the possibility to dismiss employees at short notice is only relevant in the case of employees with short tenure, but not in the case of employees with longer tenure. This finding supports earlier empirical evidence on the relationship between employment protection legislation and the quality of job matching (Marinescu, 2009). Shorter notice periods enable firms to adjust their workforce at lower cost and hence improve the sorting of employees into jobs they are best suited for. However, these benefits will be mitigated with employees' increasing tenure, since bad matches will more likely already be weeded out. Thus, the length of the notice period plays a more pronounced role at the beginning of employment relationships, which is also reflected by our empirical results.

Further, our findings indicate that both banks' lending decision and firms' decision to apply for a loan are affected by the firms' obligation to obtain the approval of a third party in order to terminate an employment, but they are not affected by the firms' obligation to notify a third party before the dismissal of an employee. While banks and firms regard the obligation to notify a third party merely as administrative hurdle, they see the obligation to obtain a third party's approval as interference in the firms' human resource management, which might prevent the dismissal of unsuitable employees and therefore affect the firms' flexibility and increase their adjustment costs.

All in all, our results suggest that both banks and firms value employment protection legislation that allows for greater flexibility in structuring working hours and dismissing employees. However, while we find consistent results for the impact of dismissal regulations on banks' lending decision and firms' decision to apply for credit, we find a clear mismatch with regard to regulations on working hours.

7. Conclusion

This research examines the relationship between employment protection legislation and firms' ability to increase their leverage. Specifically, we investigate how employment protection legislation affects firms' access to credit by looking at both the credit obtained from the bank and the firms' decision to apply for a loan in ten European countries. The results suggest that employment protection legislation plays an important role in facilitating credit access and thus in firms' capital structure: regulations that allow for greater flexibility in structuring employees' working hours or dismissing employees tend to decrease the probability of being credit constrained. We find that employment protection legislation affects both banks' decision not to provide credit and firms being discouraged from applying for a loan due to fear of rejection.

Our findings have considerable implications for policy and practice. Since the countries included in the research are characterised by the free movement of people, goods, services and capital, differences in employment protection legislation can have a substantial impact on a country's GDP. Firms that operate in countries with more favourable employment protection legislation might have easier access to credit and, as a possible consequence, enjoy faster growth. This implies that firms in a favourable legal environment might have a significant competitive advantage vis-à-vis firms that are located in a more unfavourable legal environment since there are no barriers to protect them.

This paper could be extended along several lines. For instance, differences with regard to specific employment protection regulations at the industry level could be an interesting area of research in order to investigate if particular industries are put at a disadvantage in accessing credit. Moreover, since the present research includes ten European Union countries, it could be interesting to expand the research to both other developed countries (i.e. United States, Canada, Australia) and developing countries.

References

Agrawal, A.K., Matsa, D.A., 2013. Labor Unemployment Risk and Corporate Financing Decisions. J. financ. econ. 108, 449–470.

Bae, K.H., Goyal, V.K., 2009. Creditor Rights, Enforcement, and Bank Loans. J. Finance 64, 823–860.

Berger, A.N., Udell, G.F., 1995. Relationship Lending and the Lines of Credit in Small Firm Finance. J. Bus. 68, 351–381.

Berk, J.B., Stanton, R., Zechner, J., 2010. Human Capital, Bankruptcy and Capital Structure. J. Finance 65, 891–926.

Blanchard, O., Portugal, P., 2001. What Hides Behind an Unemployment Rate: Comparing Portuguese and U.S. Labor Markets. Am. Econ. Rev. 91, 187–207.

Carbó-Valverde, S., Rodríguez-Fernández, F., Udell, G.F., 2009. Bank Market Power and SME Financing Constraints. Rev. Financ. 13, 309–340.

Chava, S., Livdan, D., Purnanandam, A., 2009. Do Shareholder Rights Affect the Cost of Bank Loans? Rev. Financ. Stud. 22, 2973–3004.

Cho, S.S., El Ghoul, S., Guedhami, O., Suh, J., 2014. Creditor rights and capital structure: Evidence from international data. J. Corp. Financ. 25, 40–60.

Cingano, F., Leonardi, M., Messina, J., Pica, G., 2010. The Effect of Employment Protection Legislation and Financial Market Imperfections on Investment: Evidence from a Firm-Level Panel of EU countries. Econ. Policy 25, 117–163.

Corominas, A., Lusa, A., Pastor, R., 2004. Characteristics and Classification of the Annualised Working Hours Planning Problems. International. J. Serv. Technol. Manag. 5, 435–477.

Dembe, A.E., Erickson, J.B., Delbos, R.G., Banks, S.M., 2005. The impact of overtime and long work hours on occupational injuries and illnesses: new evidence from the United States. Occup. Environ. Med. 62, 588–597.

Elsas, R., 2005. Empirical determinants of relationship lending. J. Financ. Intermediation 14, 32–57.

Faulkender, M., Petersen, M.A., 2006. Does the Source of Capital Affect Capital Structure? Rev. Financ.

Stud. 19, 45–79.

Ferrando, A., Maresch, D., Moro, A., 2015. Creditor protection, judicial enforcement and credit access (No. 1829 ECB Working Paper), ECB Working Paper Series. Frankfurt am Main.

Heckman, J.J., 1979. Selection Bias as a Specification Error. Econometrica 47, 153–161.

Kim, H., 2015. How Does Labor Market Size Affect Firm Capital Structure? Evidence from Large Plant Openings. (No. WP No. CES-WP-15-38.).

Kugler, A., Pica, G., 2008. Effects from Employment Protection on Workers and Job Flows: Evidence from the 1990 Italian Reform. Labour Econ. 15, 78–95.

Kuzmina, O., 2013. Operating Flexibility and Capital Structure: Evidence from a Natural Experiment, Working Paper.

Kysucky, V., Norden, L., 2014. The Benefits of Relationship Lending in a Cross-Country Context: A Meta-Analysis. Manage. Sci. 62, 90–110. doi:DOI: 10.1287/mnsc.2014.2088

Laeven, L., Majnoni, G., 2005. Does judicial efficiency lower the cost of credit? J. Bank. Financ. 29, 1791–1812.

Liberti, J.M., Mian, A.R., 2009. Estimating the Effect of Hierarchies on Information Use. Rev. Fianancial Stud. 22, 4057–4090.

Lusa, A., Pastor, R., Corominas, A., 2008. Determining the Most Appropriate Set of Weekly Working Hours for Planning Annualised Working Time. International. J. Prod. Econ. 111, 697–706.

Marinescu, I., 2009. Job Security Legislation and Job Duration: Evidence from the United Kingdom. J. Labor Econ. 27, 465–486.

Martinelli, C., 1997. Small firms, borrowing constraints, and reputation,. J. Econ. Behav. Organ. 33, 91–105.

Maxwell, G., Rankine, L., Bell, S., MacVicar, A., 2007. The incidence and impact of flexible working arrangements in smaller businesses. Empl. Relations 29, 138–161.

Messina, J., Vallanti, G., 2007. Job Flow Dynamics and Firing Restrictions: Evidence from Europe. Econ. J. 117, F279–F301.

Moro, A., Fink, M., 2013. Loan Manager Trust and Credit Access for SMEs. J. Bank. Financ. 37, 927–936.

Moro, A., Maresch, D., Ferrando, A., 2016. Creditor Protection, Judiacial Enforcement and Credit Access. Eur. J. Financ. doi:dx.doi.org/10.1080/1351847X.2016.1216871

Myers, S.C., Majluf, N.S., 1984. Corporate Finance and Investment Decisions When Firms Have Information Investors Do Not Have. J. financ. econ. 13, 187–221.

Neuberger, D., Pedergnana, M., Räthke-Döppner, S., 2008. Concentration of Banking Relationships in Switzerland: The Result of Firm Structure or Banking Market Structure? J. Financ. Serv. Res. 33, 101–126.

Nickell, S.J., 1978. Fixed Costs, Employment and Labour Demand over the Cycle. Economica 45, 329–345.

Petersen, M.A., Rajan, R.G., 1994. The Benefits of Lending Relationships: Evidence from Small Business Data. J. Finance 49, 3–37.

Piga, C.A., Atzeni, G., 2007. R&D Investment, Credit Rationing and Sample Selection. Bull. Econ. Res. 59, 149–178.

Piga, C.A., Vivarelli, M., 2004. Internal and External R&D: A Sample Selection Approach. Oxf. Bull. Econ. Stat. 66, 457–482.

Qian, J., Strahan, P.E., 2007. How Laws and Institutions Shape Financial Contracts: The Case of Bank Loans. J. Finance 62, 2803–2834.

Schmalz, M.C., 2015. Unionization, Cash, and Leverage. (No. No. 1215.).

Serfling, M., 2016. Firing Costs and Capital Structure Decisions. J. Financ.

Simintzi, E., Vig, V., Volpin, P., 2015. Labor Protection and Leverage. Rev. Financ. Stud. 28, 561–591.

Tang, Y., Deng, C., Moro, A., 2016. Firm-bank trusting relationship and discouraged borrowers. Rev. Manag. Sci. doi:10.1007/s11846-016-0194-z

Figure 1A Applications for Bank Loans and Loans Obtained (over the preceding six months; percentage of respondents)

Source: ECB/EC SAFE and authors' calculation.

Notes: The figure shows the evolution over time and across countries of firms that applied for a bank loan and firms that obtained a bank loan. All figures are presented as a percentage of total firms in each country in a given wave.

Figure 1B No Application for Bank Loans and Discouraged Borrowers (over the preceding six months; percentage of respondents)
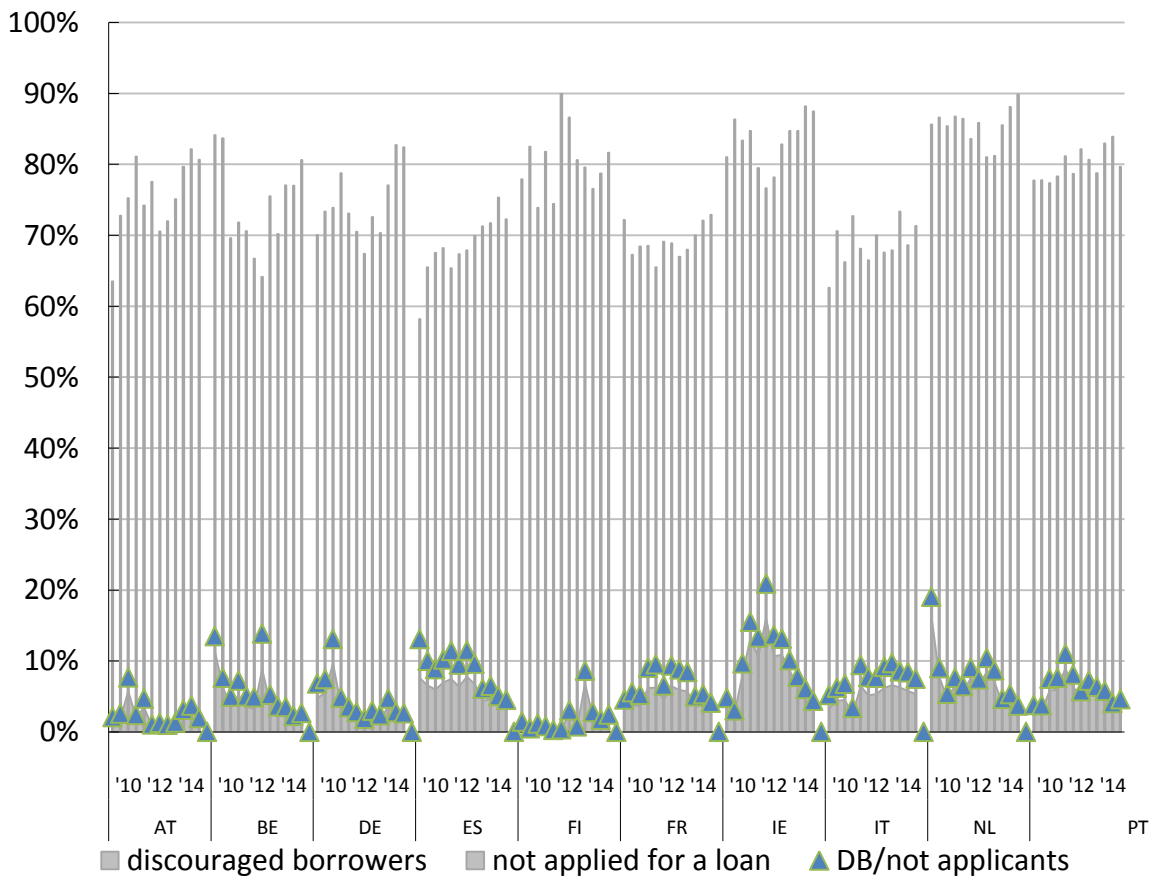
Source: ECB/EC SAFE and authors' calculation.

Notes: The figure shows the evolution over time and across countries of firms that did not apply for a bank loan and firms that did not apply for a loan because of fear of rejection (discouraged borrowers). All figures are presented as a percentage of total firms in each country in a given wave.

Table 1A Descriptive statistics – Entire Dataset

Variable	Obs	Mean	Std. Dev.	Min	Max
Credit Obtained	87825	0.1842	0.3877	0	1
Discouraged Borrowers	87825	0.0453	0.2079	0	1
Micro firm	87825	0.3086	0.4619	0	1
Small firms	87825	0.2124	0.4090	0	1
Medium-sized firms	87825	0.1654	0.3715	0	1
Large firms	87825	0.3136	0.4640	0	1
Firms up to 2 years old	87825	0.0147	0.1205	0	1
Firms 2-5 years old	87825	0.0555	0.2289	0	1
Firms 5-9 years old	87825	0.1182	0.3228	0	1
Firms older than 9 years	87825	0.7760	0.4170	0	1
Equity	86445	0.0568	0.2314	0	1
Retained profits	86422	0.2921	0.4548	0	1
Trade credit	86812	0.2714	0.4447	0	1
Leasing and factoring	87286	0.3909	0.4880	0	1
Change in labour costs	87825	0.4675	0.6399	-1	1
Change in GDP	87825	0.5598	1.9527	-7.49	7.13
Unemployment rate	87825	10.4029	5.9520	4.33	26.2
Herfindahl-Hirschman Index of bank concentration	87825	0.0644	0.0574	0.02	0.37
Industry risk (Bank perception)	87825	0.0999	0.1945	-0.375	1
BLS index	87825	0.0364	0.1718	-0.375	1
Flexibility in extending the workweek for seasonal needs (1=yes; 0=no)	87825	0.8172	0.3865	0	1
Restrictions on night work (1=yes; 0=no)	87825	0.3896	0.4877	0	1
Restrictions on weekly holidays (1=yes; 0=no)	87825	0.2511	0.4336	0	1
Notice period after 1 year (2010_2014)	82705	4.2674	1.3509	1	6.5
Notice period after 5 years (2009_2014)	87825	7.0551	2.3604	2	8.7
Notice period after 10 years (2010_2014)	82705	10.6259	5.3251	2	17.33
Third party notification for one dismissal (1=yes; 0=no)	87825	0.6904	0.4623	0	1
Third party notification for collective dismissal (1=yes; 0=no)	87825	0.9694	0.1723	0	1
Third party approval for one dismissal (1=yes; 0=no)	87825	0.0635	0.2438	0	1

Notes: This table presents weighted summary statistics for the variables used in the empirical analysis for the entire dataset. The weights restore the proportions of the economic weight (in terms of number of employees) of each size class, economic activity and country and are applied to the variables derived from the survey.

Table 1B Descriptive statistics – Firms Applying for Credit

Variable	Obs	Mean	Std. Dev.	Min	Max
Credit Obtained	21332	0.6880	0.4633	0	1
Discouraged Borrowers					
Micro firm	21332	0.2165	0.4119	0	1
Small firms	21332	0.2035	0.4026	0	1
Medium-sized firms	21332	0.1819	0.3858	0	1
Large firms	21332	0.3981	0.4895	0	1
Firms up to 2 years old	21332	0.0148	0.1208	0	1
Firms 2-5 years old	21332	0.0473	0.2124	0	1
Firms 5-9 years old	21332	0.1054	0.3071	0	1
Firms older than 9 years	21332	0.7997	0.4002	0	1
Equity	21052	0.0818	0.2740	0	1
Retained profits	21091	0.3729	0.4836	0	1
Trade credit	21162	0.3767	0.4846	0	1
Leasing and factoring	21260	0.5039	0.5000	0	1
Change in labour costs	21332	0.4853	0.6537	-1	1
Change in GDP	21332	0.4031	1.9751	-7.49	7.13
Unemployment rate	21332	10.9031	6.0830	4.33	26.2
Herfindahl-Hirschman Index of bank concentration	21332	0.0582	0.0476	0.02	0.37
Industry risk (Bank perception)	21332	0.1075	0.1904	-0.375	1
BLS index	21332	0.0386	0.1680	-0.375	1
Flexibility in extending the workweek for seasonal needs (1=yes; 0=no)	21332	0.7909	0.4067	0	1
Restrictions on night work (1=yes; 0=no)	21332	0.4114	0.4921	0	1
Restrictions on weekly holidays (1=yes; 0=no)	21332	0.2663	0.4421	0	1
Notice period after 1 year (2010_2014)	19746	4.3273	1.3939	1	6.5
Notice period after 5 years (2009_2014)	21332	6.9163	2.3900	2	8.7
Notice period after 10 years (2010_2014)	19746	10.1502	5.2729	2	17.33
Third party notification for one dismissal (1=yes; 0=no)	21332	0.6509	0.4767	0	1
Third party notification for collective dismissal (1=yes; 0=no)	21332	0.9706	0.1689	0	1
Third party approval for one dismissal (1=yes; 0=no)	21332	0.0340	0.1811	0	1

Notes: This table presents weighted summary statistics for the variables used in the empirical analysis for the subsample of firms that applied for a bank loan. The weights restore the proportions of the economic weight (in terms of number of employees) of each size class, economic activity and country and are applied to the variables derived from the survey.

Table 1C Descriptive statistics –Firms Not Applying for Credit

Variable	Obs	Mean	Std. Dev.	Min	Max
Credit Obtained					
Discouraged Borrowers	66493	0.0618	0.2409	0	1
Micro firm	66493	0.3423	0.4745	0	1
Small firms	66493	0.2157	0.4113	0	1
Medium-sized firms	66493	0.1593	0.3660	0	1
Large firms	66493	0.2827	0.4503	0	1
Firms up to 2 years old	66493	0.0147	0.1204	0	1
Firms 2-5 years old	66493	0.0584	0.2346	0	1
Firms 5-9 years old	66493	0.1228	0.3282	0	1
Firms older than 9 years	66493	0.7673	0.4226	0	1
Equity	65393	0.0476	0.2129	0	1
Retained profits	65331	0.2624	0.4400	0	1
Trade credit	65650	0.2326	0.4225	0	1
Leasing and factoring	66026	0.3494	0.4768	0	1
Change in labour costs	66493	0.4610	0.6347	-1	1
Change in GDP	66493	0.6171	1.9413	-7.49	7.13
Unemployment rate	66493	10.2200	5.8929	4.33	26.2
Herfindahl-Hirschman Index of bank concentration	66493	0.0666	0.0604	0.02	0.37
Industry risk (Bank perception)	66493	0.0971	0.1959	-0.375	1
BLS index	66493	0.0357	0.1731	-0.375	1
Flexibility in extending the workweek for seasonal needs (1=yes; 0=no)	66493	0.8268	0.3785	0	1
Restrictions on night work	66493	0.3817	0.4858	0	1
Restrictions on weekly holidays (1=yes; 0=no)	66493	0.2455	0.4304	0	1
Notice period after 1 year (2010_2014)	62959	4.2458	1.3344	1	6.5
Notice period after 5 years (2009_2014)	66493	7.1059	2.3475	2	8.7
Notice period after 10 years (2010_2014)	62959	10.7977	5.3335	2	17.33
Third party notification for one dismissal (1=yes; 0=no)	66493	0.7048	0.4561	0	1
Third party notification for collective dismissal (1=yes; 0=no)	66493	0.9689	0.1735	0	1
Third party approval for one dismissal (1=yes; 0=no)	66493	0.0742	0.2622	0	1

Notes: This table presents weighted summary statistics for the variables used in the empirical analysis for the subsample of firms that have not applied for a bank loan for fear of rejection. The weights restore the proportions of the economic weight (in terms of number of employees) of each size class, economic activity and country and are applied to the variables derived from the survey.

Table 2A Obtaining Credit: Flexibility in Employment Management (Logit Coefficients)

VARIABLES	Model 1	Model 2	Model 3
Micro firm	-0.760***	-0.720***	-0.761***
	(0.129)	(0.125)	(0.128)
Small firms	-0.422***	-0.414***	-0.423***
	(0.120)	(0.114)	(0.120)
Medium-sized firms	-0.133	-0.139	-0.134
	(0.110)	(0.108)	(0.109)
Firms up to 2 years old	-0.523***	-0.527**	-0.515**
	(0.201)	(0.207)	(0.202)
Firms 2-5 years old	-0.508***	-0.503***	-0.502***
	(0.110)	(0.111)	(0.110)
Firms 5-9 years old	-0.278***	-0.264***	-0.277***
	(0.0990)	(0.102)	(0.0986)
Equity	-0.130	-0.153*	-0.127
	(0.0829)	(0.0824)	(0.0832)
Retained profits	0.0534	0.0386	0.0571
	(0.0644)	(0.0646)	(0.0652)
Trade credit	-0.249***	-0.199**	-0.255***
	(0.0770)	(0.0792)	(0.0775)
Leasing and factoring	-0.197***	-0.231***	-0.195***
	(0.0337)	(0.0363)	(0.0335)
Change in labour costs	0.210***	0.214***	0.212***
	(0.0390)	(0.0373)	(0.0386)
Change in GDP	0.167***	0.0991***	0.165***
	(0.0365)	(0.0252)	(0.0353)
Unemployment rate	-0.0372***	-0.0181**	-0.0372***
	(0.00896)	(0.00848)	(0.00891)
Herfindahl-Hirschman Index of bank concentration	-2.370	-2.468**	-2.644*
	(1.506)	(0.988)	(1.549)
Waves		Included	
Industry risk (Bank perception)	-0. 158	-0. 200	-0. 294
	(0.00316)	(0.00243)	(0.00304)
BLS index	-0. 442**	-0. 304*	-0. 366
	(0.00224)	(0.00171)	(0.00227)
Flexibility in extending the workweek for seasonal needs	-0.242**		
	(0.0975)		
Restrictions on night work		-0.604***	
		(0.0911)	
Restrictions on weekly holidays			0.218**
			(0.0997)
Constant	2.498***	2.158***	2.290***
	(0.215)	(0.192)	(0.236)
Observations	20,748	20,748	20,748
chi2	3136	9143	6184
p	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0749	0.0808	0.0748
N_clust	40	40	40

Notes: Dependent Variable: Whether or not the bank provided the loan; Independent Variables: firm characteristics (dummy variables for micro, small and medium-sized firms); age of the firm (dummy variables for younger than 2 years, between 2 and 5 years, between 5 and 9 years); firm's sources of finance (dummy variables for use of retained earnings, trade credit, leasing and equity); firm performance (categorical variable for change in labour costs); macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index); flexibility in structuring the employees' working hours (dummy variables for flexibility to extend the working hours for seasonal needs, restrictions on night work and restrictions on weekly holidays).
All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 2B Obtaining credit: Notice Period (Logit Coefficients)

VARIABLES	Model 4	Model 5	Model 6
Micro firm	-0.751***	-0.762***	-0.776***
	(0.132)	(0.125)	(0.129)
Small firms	-0.422***	-0.424***	-0.427***
	(0.118)	(0.117)	(0.118)
Medium-sized firms	-0.139	-0.135	-0.136
	(0.109)	(0.108)	(0.111)
Firms up to 2 years old	-0.531**	-0.501**	-0.498**
	(0.252)	(0.203)	(0.252)
Firms 2-5 years old	-0.428***	-0.497***	-0.417***
	(0.123)	(0.110)	(0.124)
Firms 5-9 years old	-0.240**	-0.274***	-0.239**
	(0.107)	(0.0972)	(0.104)
Equity	-0.123	-0.127	-0.124
	(0.0838)	(0.0839)	(0.0848)
Retained profits	0.0154	0.0443	0.0309
	(0.0711)	(0.0671)	(0.0708)
Trade credit	-0.237***	-0.266***	-0.272***
	(0.0774)	(0.0756)	(0.0729)
Leasing and factoring	-0.222***	-0.197***	-0.206***
	(0.0361)	(0.0330)	(0.0347)
Change in labour costs	0.217***	0.220***	0.219***
	(0.0411)	(0.0389)	(0.0427)
Change in GDP	0.0982***	0.179***	0.170***
	(0.0265)	(0.0393)	(0.0423)
Unemployment rate	-0.0600***	-0.0262**	-0.0199
	(0.00977)	(0.0107)	(0.0127)
Herfindahl-Hirschman Index of bank concentration	-3.049*	-2.590*	-2.711*
	(1.562)	(1.534)	(1.478)
Waves		Included	
Industry risk (Bank perception)	0. 350	-0. 0981	0. 0753
	(0.00300)	(0.00325)	(0.00299)
BLS index	-0. 769***	-0. 501**	-0. 548**
	(0.00218)	(0.00232)	(0.00214)
Notice period after 1 year (2010_2014)	-0.143***		
	(0.0397)		
Notice period after 5 years (2009_2014)		0.0365	
		(0.0252)	
Notice period after 10 years (2010_14)			0.0276
			(0.0179)
Constant	2.771***	1.968***	1.284***
	(0.303)	(0.277)	(0.362)
Observations	19,199	20,748	19,199
chi2	2347	4008	2914
p	0.0000	0.0000	0.0000
Mc Fadden Pseudo R2	0.0767	0.0741	0.0744
N_clust	40	40	40

*Note*s: Dependent Variable: Whether or not the bank provided the loan; Independent Variables: firm characteristics (dummy variables for micro, small and medium-sized firms); age of the firm (dummy variables for younger than 2 years, between 2 and 5 years, between 5 and 9 years); firm's sources of finance (dummy variables for use of retained earnings, trade credit, leasing and equity); firm performance (categorical variable for change in labour costs); macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index); length of notice period after one, five and ten years of tenure.
All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 2C Obtaining credit: Third Party Involvement (Logit Coefficients)

VARIABLES	Model 7	Model 8	Model 9
Micro firm	-0.769***	-0.769***	-0.776***
	(0.125)	(0.125)	(0.126)
Small firms	-0.427***	-0.428***	-0.436***
	(0.117)	(0.117)	(0.117)
Medium-sized firms	-0.136	-0.136	-0.142
	(0.108)	(0.108)	(0.109)
Firms up to 2 years old	-0.499**	-0.497**	-0.501**
	(0.204)	(0.205)	(0.208)
Firms 2-5 years old	-0.493***	-0.492***	-0.498***
	(0.110)	(0.109)	(0.112)
Firms 5-9 years old	-0.273***	-0.272***	-0.264***
	(0.0964)	(0.0953)	(0.0953)
Equity	-0.123	-0.123	-0.150*
	(0.0828)	(0.0830)	(0.0825)
Retained profits	0.0387	0.0376	0.0407
	(0.0630)	(0.0677)	(0.0674)
Trade credit	-0.276***	-0.277***	-0.255***
	(0.0737)	(0.0748)	(0.0756)
Leasing and factoring	-0.192***	-0.192***	-0.208***
	(0.0313)	(0.0321)	(0.0341)
Change in labour costs	0.220***	0.221***	0.210***
	(0.0393)	(0.0395)	(0.0384)
Change in GDP	0.177***	0.176***	0.161***
	(0.0400)	(0.0398)	(0.0379)
Unemployment rate	-0.0373***	-0.0375***	-0.0487***
	(0.00927)	(0.00869)	(0.00822)
Herfindahl-Hirschman Index of bank concentration	-2.399	-2.441	1.115
	(1.526)	(1.599)	(0.849)
Waves		Included	
Industry risk (Bank perception)	-0. 0642	-0. 0550	-0. 530*
	(0.00301)	(0.00317)	(0.00291)
BLS index	-0. 565**	-0. 560**	-0. 278
	(0.00222)	(0.00240)	(0.00212)
Third party notification for one dismissal	-0.0181		
	(0.0979)		
Third party notification for collective dismissal		-0.0356	
		(0.183)	
Third party approval for one dismissal			-1.388***
			(0.148)
Constant	2.333***	2.358***	2.367***
	(0.222)	(0.288)	(0.222)
Observations	20,748	20,748	20,748
chi2	5349	4570	5955
p	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0737	0.0737	0.0802
N_clust	40	40	40

Notes: Dependent Variable: Whether or not the bank provided the loan; Independent Variables: firm characteristics (dummy variables for micro, small and medium-sized firms); age of the firm (dummy variables for younger than 2 years, between 2 and 5 years, between 5 and 9 years); firm's sources of finance (dummy variables for use of retained earnings, trade credit, leasing and equity); firm performance (categorical variable for change in labour costs); macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index); third party involvement in the dismissal (dummy variable for the requirement to notify a third party before a single or collective dismissal and for the requirement to obtain third party approval for a dismissal).
All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3A Discouraged Borrowers: Flexibility in Structuring Employees' Working Hours (Logit Coefficients)

VARIABLES	Model 10	Model 11	Model 12
Micro firm	1.066***	1.033***	1.056***
	(0.0940)	(0.0905)	(0.0920)
Small firms	0.737***	0.710***	0.728***
	(0.128)	(0.126)	(0.127)
Medium-sized firms	0.386***	0.366***	0.379***
	(0.100)	(0.0984)	(0.0989)
Firms up to 2 years old	0.0951	0.127	0.111
	(0.126)	(0.118)	(0.124)
Firms 2-5 years old	0.403***	0.420***	0.412***
	(0.0827)	(0.0885)	(0.0842)
Firms 5-9 years old	0.224***	0.231**	0.228***
	(0.0850)	(0.0913)	(0.0868)
Equity	0.264***	0.280***	0.266***
	(0.102)	(0.101)	(0.103)
Retained profits	-0.0477	-0.0632	-0.0464
	(0.0616)	(0.0627)	(0.0617)
Trade credit	0.388***	0.355***	0.383***
	(0.0764)	(0.0823)	(0.0782)
Leasing and factoring	0.219***	0.224***	0.222***
	(0.0658)	(0.0643)	(0.0653)
Change in labour costs	-0.121***	-0.104***	-0.114***
	(0.0380)	(0.0352)	(0.0375)
Change in GDP	-0.0179	0.00535	-0.0146
	(0.0332)	(0.0299)	(0.0318)
Unemployment rate	0.0263***	0.0207**	0.0259***
	(0.00881)	(0.0101)	(0.00898)
Herfindahl-Hirschman Index of bank concentration	0.395	0.204	0.175
	(0.925)	(0.766)	(0.976)
Waves		Included	
BLS index	-0. 228	-0. 312	-0. 260
	(0.00192)	(0.00198)	(0.00185)
Flexibility in extending the workweek for seasonal needs	-0.254***		
	(0.0681)		
Restrictions on night work		0.155	
		(0.110)	
Restrictions on week holidays			0.152*
			(0.0891)
Constant	-3.444***	-3.541***	-3.657***
	(0.186)	(0.196)	(0.192)
Observations	64,312	64,312	64,312
chi2	3153	2903	3546
p	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0391	0.0384	0.0385
N_clust	40	40	40

Notes: Dependent Variable: Whether or not the firm is a discouraged borrower; Independent Variables: firm characteristics (dummy variables for micro, small and medium-sized firms); age of the firm (dummy variables for younger than 2 years, between 2 and 5 years, between 5 and 9 years); firm's sources of finance (dummy variables for use of retained earnings, trade credit, leasing and equity); firm performance (categorical variable for change in labour costs); macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index); flexibility in structuring the employees' working hours (dummy variables for flexibility to extend the working hours for seasonal needs, restrictions on night work and restrictions on weekly holidays). All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3B Discouraged Borrowers: Notice Period (Logit Coefficients)

VARIABLES	Model 13	Model 14	Model 15
Micro firm	1.059***	1.058***	1.078***
	(0.101)	(0.0932)	(0.101)
Small firms	0.733***	0.728***	0.737***
	(0.139)	(0.128)	(0.139)
Medium-sized firms	0.404***	0.377***	0.405***
	(0.103)	(0.0983)	(0.103)
Firms up to 2 years old	0.0907	0.115	0.0821
	(0.150)	(0.124)	(0.149)
Firms 2-5 years old	0.438***	0.411***	0.432***
	(0.0930)	(0.0853)	(0.0919)
Firms 5-9 years old	0.249***	0.227***	0.249***
	(0.0964)	(0.0875)	(0.0951)
Equity	0.294***	0.258**	0.297***
	(0.101)	(0.103)	(0.101)
Retained profits	-0.0409	-0.0467	-0.0471
	(0.0670)	(0.0617)	(0.0684)
Trade credit	0.361***	0.388***	0.376***
	(0.0870)	(0.0810)	(0.0839)
Leasing and factoring	0.280***	0.214***	0.268***
	(0.0641)	(0.0641)	(0.0627)
Change in labour costs	-0.124***	-0.111***	-0.120***
	(0.0414)	(0.0361)	(0.0417)
Change in GDP	0.0263	-0.00637	-0.0182
	(0.0359)	(0.0304)	(0.0340)
Unemployment rate	0.0384***	0.0476***	0.0161
	(0.0116)	(0.0131)	(0.0150)
Herfindahl-Hirschman Index of bank concentration	0.134	-0.00813	-0.0465
	(0.848)	(0.943)	(0.777)
Waves		Included	
BLS index	-0. 401*	-0. 227	-0. 423**
	(0.00213)	(0.00175)	(0.00203)
Notice period after 1 year (2010_2014)	0.0852**		
	(0.0382)		
Notice period after 5 years (2009_2014)		0.0693**	
		(0.0283)	
Notice period after 10 years (2010_14)			-0.0138
			(0.0169)
Constant	-4.817***	-4.297***	-3.992***
	(0.297)	(0.367)	(0.342)
Observations	60,881	64,312	60,881
chi2	2474	7069	4935
p	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0402	0.0391	0.0395
N_clust	40	40	40

*Note*s: Dependent Variable: Whether or not the firm is a discouraged borrower; Independent Variables: firm characteristics (dummy variables for micro, small and medium-sized firms); age of the firm (dummy variables for younger than 2 years, between 2 and 5 years, between 5 and 9 years); firm's sources of finance (dummy variables for use of retained earnings, trade credit, leasing and equity); firm performance (categorical variable for change in labour costs); macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index); length of notice period after one, five and ten years of tenure.
All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 3C Discouraged Borrowers: Third Party Involvement in the Dismissal Process (Logit Coefficients)

VARIABLES	Model 16	Model 17	Model 18
Micro firm	1.046***	1.046***	1.051***
	(0.0907)	(0.0917)	(0.0915)
Small firms	0.722***	0.716***	0.718***
	(0.126)	(0.126)	(0.126)
Medium-sized firms	0.375***	0.369***	0.366***
	(0.0995)	(0.0979)	(0.0983)
Firms up to 2 years old	0.117	0.123	0.113
	(0.121)	(0.120)	(0.118)
Firms 2-5 years old	0.415***	0.418***	0.410***
	(0.0845)	(0.0874)	(0.0891)
Firms 5-9 years old	0.230***	0.231**	0.225**
	(0.0878)	(0.0899)	(0.0906)
Equity	0.270***	0.268**	0.287***
	(0.104)	(0.105)	(0.103)
Retained profits	-0.0561	-0.0622	-0.0549
	(0.0610)	(0.0625)	(0.0633)
Trade credit	0.369***	0.371***	0.367***
	(0.0789)	(0.0810)	(0.0812)
Leasing and factoring	0.224***	0.217***	0.214***
	(0.0661)	(0.0646)	(0.0649)
Change in labour costs	-0.112***	-0.106***	-0.096***
	(0.0398)	(0.0355)	(0.0355)
Change in GDP	-0.0101	-0.0123	-0.00568
	(0.0313)	(0.0300)	(0.0311)
Unemployment rate	0.0271***	0.0254***	0.0326***
	(0.00944)	(0.00966)	(0.0106)
Herfindahl-Hirschman Index of bank concentration	0.407	0.342	-2.015**
	(0.892)	(0.911)	(0.836)
Waves		Included	
BLS index	-0. 291	-0. 286	-0. 244
	(0.00202)	(0.00196)	(0.00206)
Third party notification for one dismissal	-0.0960		
	(0.108)		
Third party notification for collective dismissal		0.0471	
		(0.154)	
Third party approval for one dismissal			0.722***
			(0.158)
Constant	-3.556***	-3.643***	-3.558***
	(0.193)	(0.258)	(0.183)
Observations	64,312	64,312	64,312
chi2	2603	3381	3206
p	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0382	0.0380	0.0401
N_clust	40	40	40

Notes: Dependent Variable: Whether or not the firm is a discouraged borrower; Independent Variables: firm characteristics (dummy variables for micro, small and medium-sized firms); age of the firm (dummy variables for younger than 2 years, between 2 and 5 years, between 5 and 9 years); firm's sources of finance (dummy variables for use of retained earnings, trade credit, leasing and equity); firm performance (categorical variable for change in labour costs); macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index); third party involvement in the dismissal (dummy variable for the requirement to notify a third party before a single or collective dismissal and for the requirement to obtain third party approval for a dismissal. All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 4A Obtain Credit: Interaction Variables (Logit Coefficients)

Independent variables and controls as in Tables 2A, 2B and 2C

VARIABLES	Model 1 (1)	Model 1 (2)	Model 1 (3)	Model 1 (4)	Model 1 (5)	Model 2 (1)	Model 2 (2)	Model 2 (3)	Model 2 (4)	Model 2 (5)	Model 3 (1)	Model 3 (2)	Model 3 (3)	Model 3 (4)	Model 3 (5)
Manufacturing	0.181 (0.136)					0.185** (0.0897)	0.149 (0.180)				0.179 (0.133)	0.208 (0.169)			
Construction	-0.189 (0.152)		0.369*** (0.0444)			-0.180 (0.130)		-0.106 (0.221)			-0.188 (0.155)		-0.484*** (0.105)		
Trade	0.266** (0.134)			0.138** (0.0581)		0.261*** (0.0922)			0.255* (0.143)		0.267** (0.131)			0.261 (0.167)	
Service					-0.246* (0.138)					-0.244** (0.109)					-0.137 (0.134)
Flexibility in extending the workweek for seasonal needs	-0.253** (0.104)	-0.318*** (0.110)	-0.161* (0.0927)	-0.265*** (0.102)	-0.139 (0.0870)										
Restrictions on night work						-0.605*** (0.0866)	-0.605*** (0.0968)	-0.566*** (0.0976)	-0.591*** (0.103)	-0.695*** (0.115)					
Restrictions on weekly holidays											0.227** (0.102)	0.296*** (0.110)	0.143 (0.102)	0.232** (0.106)	0.218* (0.129)
M * Flexibility		0.312* (0.173)													
M * Restrictions on night work							-0.0159 (0.197)								
M * Restrictions on weekly holidays												-0.319* (0.179)			
C * Flexibility			-0.821*** (0.114)												
C * Restrictions on night work								-0.342 (0.229)							
C * Restrictions on weekly holidays													0.718*** (0.181)		
T * Flexibility				0.127 (0.167)											
T * Restrictions on night work									-0.0418 (0.177)						
T * Restrictions on weekly holidays														-0.0739 (0.174)	
S * Flexibility					0.00297 (0.155)										
S * Restrictions on night work										0.214 (0.148)					
S * Restrictions on weekly holidays															0.00405 (0.152)
Constant	2.399*** (0.168)	2.509*** (0.209)	2.433*** (0.198)	2.473*** (0.212)	2.560*** (0.206)	2.049*** (0.141)	2.106*** (0.185)	2.154*** (0.188)	2.110*** (0.193)	2.266*** (0.175)	2.182*** (0.174)	2.218*** (0.207)	2.312*** (0.219)	2.242*** (0.237)	2.349*** (0.251)
Observations	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748	20,748
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0781	0.0759	0.0779	0.0764	0.0756	0.0839	0.0814	0.0827	0.0822	0.0819	0.0780	0.0759	0.0778	0.0763	0.0755
N_clust	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40

Notes: Dependent Variable: Whether or not the bank provided the credit; Independent Variables: flexibility in structuring the employees' working hours (dummy variables for flexibility to extend the working hours for seasonal needs, restrictions on night work and restrictions on weekly holidays), industry (dummy variables for Construction, Manufacturing, Service), interaction of the these variables (M=Manufacturing, C=Construction, T=Trade, S=Service). Independent and control variables not reported in the table: Firm characteristics (dummy variable for Micro firms); Age of the firm (dummy variable for younger than 2 years, between 2 and 5 years, between 5 and 9 years); Firm performance (categorical variable for change in labour costs); Firm sources of finance (dummy variable for Retained earnings, Trade credit, Leasing and Equity); Macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index). All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4B Obtain Credit: Interaction Variables (Logit Coefficients)

VARIABLES	Model 4				
	Independent variables and controls as in Tables 2A, 2B and 2C				
Manufacturing	0.191**	0.190			
	(0.0935)	(0.262)			
Construction	-0.204		-0.364		
	(0.182)		(0.373)		
Trade	0.259**			0.421	
	(0.118)			(0.273)	
Service					-0.262
					(0.287)
Notice period after 1 year (2010_2014)	-0.143***	-0.144***	-0.144***	-0.129***	-0.155***
	(0.0323)	(0.0442)	(0.0374)	(0.0420)	(0.0487)
M * Notice period after 1 year		-0.00860			
		(0.0493)			
C * Notice period after 1 year			0.00983		
			(0.0795)		
T * Notice period after 1 year				-0.0430	
				(0.0527)	
S * Notice period after 1 year					0.0289
					(0.0564)
Constant	2.671***	2.727***	2.799***	2.668***	2.876***
	(0.255)	(0.307)	(0.286)	(0.306)	(0.354)
Observations	19,199	19,199	19,199	19,199	19,199
p	0.0000	0.0000	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0800	0.0773	0.0783	0.0782	0.0774
N_clust	40	40	40	40	40

Notes: Dependent Variable: Whether or not the bank provided the credit; Independent Variables: length of notice period after one year of tenure; industry (dummy variables for Construction, Manufacturing, Service); interaction of these variables (M=Manufacturing, C=Construction, T=Trade, S=Service).

Independent and control variables not reported in the table: Firm characteristics (dummy variable for Micro firms); Age of the firm (dummy variable for younger than 2 years, between 2 and 5 years, between 5 and 9 years); Firm performance (categorical variable for change in labour costs); Firm sources of finance (dummy variable for Retained earnings, Trade credit, Leasing and Equity), Macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index).

All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 4C Obtain Credit: Interaction Variables (Logit Coefficients)

VARIABLES	Model 9				
	Independent variables and controls as in Tables 2A, 2B and 2C				
Manufacturing	0.153	0.109			
	(0.128)	(0.133)			
Construction	-0.185		-0.288		
	(0.175)		(0.176)		
Trade	0.279**			0.261**	
	(0.123)			(0.124)	
Service					-0.134
					(0.108)
Third party approval for one dismissal	-1.395***	-1.352***	-1.365***	-1.421***	-1.428***
	(0.135)	(0.165)	(0.140)	(0.145)	(0.191)
M * Third party approval		-0.138			
		(0.164)			
C * Third party approval			-0.227		
			(0.184)		
T * Third party approval				0.0272	
				(0.141)	
S * Third party approval					0.104
					(0.170)
Constant	2.266***	2.330***	2.375***	2.318***	2.425***
	(0.165)	(0.204)	(0.212)	(0.218)	(0.223)
Observations	20,748	20,748	20,748	20,748	20,748
p	0.0000	0.0000	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0833	0.0805	0.0816	0.0819	0.0808
N_clust	40	40	40	40	40

Notes: Dependent Variable: Whether or not the bank provided the credit; Independent Variables: requirement to obtain third party approval for a dismissal; Industry (dummy variable for Construction, Manufacturing, Service); interaction of these variables (M=Manufacturing, C=Construction, T=Trade, S=Service).

Independent and control variables not reported in the table: Firm characteristics (dummy variable for Micro firms); Age of the firm (dummy variable for younger than 2 years, between 2 and 5 years, between 5 and 9 years); Firm performance (categorical variable for change in labour costs); Firm sources of finance (dummy variable for Retained earnings, Trade credit, Leasing and Equity); Macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index).

All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 5A Discouraged Borrowers: Interaction Variables (Logit Coefficients)

VARIABLES	Model 10					Model 12				
	Independent variables and controls as in Tables 3A, 3B and 3C									
Manufacturing	0.0328 (0.0599)	0.0827 (0.0635)				0.0289 (0.0695)	-0.0206 (0.0762)			
Construction	0.252* (0.146)		-0.0400 (0.0520)			0.252* (0.148)		0.376** (0.164)		
Trade	-0.0747 (0.0922)			-0.199*** (0.0190)		-0.0769 (0.0984)			-0.0982 (0.122)	
Service					0.0984 (0.0626)					-0.0731 (0.0989)
Flexibility in extending the workweek for seasonal needs	-0.249*** (0.0692)	-0.239*** (0.0803)	-0.291*** (0.0694)	-0.273*** (0.0549)	-0.176* (0.101)					
Restrictions on weekly holidays						0.146 (0.0910)	0.125 (0.106)	0.199** (0.0909)	0.176* (0.0898)	0.0746 (0.110)
M * Flexibility		-0.0788 (0.0862)								
M * Restrictions on weekly holidays							0.142 (0.124)			
C * Flexibility			0.370** (0.163)							
C * Restrictions on weekly holidays								-0.432** (0.195)		
T * Flexibility				0.0915 (0.105)						
T * Restrictions on weekly holidays									-0.106 (0.154)	
S * Flexibility					-0.162 (0.112)					
S * Restrictions on weekly holidays										0.165 (0.152)
Constant	-3.452*** (0.196)	-3.464*** (0.197)	-3.415*** (0.186)	-3.407*** (0.187)	-3.491*** (0.186)	-3.658*** (0.195)	-3.658*** (0.203)	-3.671*** (0.196)	-3.642*** (0.183)	-3.624*** (0.212)
Observations	64,312	64,312	64,312	64,312	64,312	64,312	64,312	64,312	64,312	64,312
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0402	0.0391	0.0403	0.0395	0.0393	0.0396	0.0386	0.0399	0.0389	0.0387
N_clust	40	40	40	40	40	40	40	40	40	40

Notes: Dependent Variable: Whether the firm is a discouraged borrower; Independent Variables: flexibility in structuring the employees' working hours (dummy variables for flexibility to extend the workweek for seasonal needs, restrictions on weekly holidays); Industry (dummy variable for Construction, Manufacturing, Services); interaction of these variables (M=Manufacturing, C=Construction, T=Trade, S=Service).

Independent and control variables not reported in the table: Firm characteristics (dummy variable for Micro firms); Age of the firm (dummy variable for younger than 2 years, between 2 and 5 years, between 5 and 9 years); Firm performance (categorical variable for change in labour costs); Firm sources of finance (dummy variable for Retained earnings, Trade credit, Leasing and Equity); Macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index).

All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 5B Discouraged Borrowers: Interaction Variables (Logit Coefficients)

VARIABLES	Model 13					Model 14				
	Independent variables and controls as in Tables 3A, 3B and 3C									
Manufacturing	0.0418 (0.0976)	0.191 (0.208)				0.0256 (0.0751)	0.146 (0.186)			
Construction	0.265** (0.131)		0.106 (0.320)			0.253* (0.152)		0.757*** (0.225)		
Trade	-0.0770 (0.108)			-0.253 (0.276)		-0.0769 (0.102)			-0.238 (0.239)	
Service					0.0453 (0.277)					-0.310 (0.227)
Notice period after 1 year (2010_2014)	0.0822** (0.0334)	0.0923** (0.0447)	0.0785*** (0.0304)	0.0771* (0.0455)	0.0931** (0.0473)					
Notice period after 5 years (2009-2014)						0.0683** (0.0276)	0.0728** (0.0299)	0.0787*** (0.0272)	0.0654** (0.0316)	0.0509* (0.0285)
M * Notice period after 1 year		-0.0376 (0.0412)								
M * Notice period after 5 years							-0.0193 (0.0277)			
C * Notice period after 1 year			0.0396 (0.0717)							
C * Notice period after 5 years								-0.0759** (0.0335)		
T * Notice period after 1 year				0.0287 (0.0548)						
T * Notice period after 5 years									0.0168 (0.0361)	
S * Notice period after 1 year					-0.0194 (0.0575)					
S * Notice period after 5 years										0.0409 (0.0314)
Constant	-4.815*** (0.267)	-4.858*** (0.308)	-4.800*** (0.277)	-4.758*** (0.315)	-4.835*** (0.336)	-4.289*** (0.356)	-4.323*** (0.374)	-4.363*** (0.357)	-4.248*** (0.389)	-4.154*** (0.346)
Observations	60,881	60,881	60,881	60,881	60,881	64,312	64,312	64,312	64,312	64,312
p	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mc Fadden Pseudo R²	0.0414	0.0403	0.0413	0.0406	0.0403	0.0402	0.0392	0.0406	0.0395	0.0395
N_clust	40	40	40	40	40	40	40	40	40	40

Notes: Dependent Variable: Whether the firm is a discouraged borrower; Independent Variables: length of notice period after one year and five years of tenure; interaction of these variables (M=Manufacturing, C=Construction, T=Trade, S=Service). Independent and control variables not reported in the table: Firm characteristics (dummy variable for Micro firms); Age of the firm (dummy variable for younger than 2 years, between 2 and 5 years, between 5 and 9 years); Firm performance (categorical variable for change in labour costs); Firm sources of finance (dummy variable for Retained earnings, Trade credit, Leasing and Equity); Macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index).

All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Table 5C Discouraged Borrowers: Interaction Variables (Logit Coefficients)

VARIABLES	Model 18				
	Independent variables and controls as in Tables 3A, 3B and 3C				
Manufacturing	0.0477	0.0426			
	(0.0986)	(0.0958)			
Construction	0.272*		0.292**		
	(0.143)		(0.143)		
Trade	-0.0742			-0.162	
	(0.103)			(0.101)	
Service					-0.0333
					(0.101)
Third party approval for one dismissal	0.740***	0.750***	0.746***	0.637***	0.775***
	(0.164)	(0.160)	(0.164)	(0.155)	(0.157)
M * Third party approval		-0.217*			
		(0.116)			
C * Third party approval			-0.126		
			(0.158)		
T * Third party approval				0.337***	
				(0.106)	
S * Third party approval					-0.0976
					(0.124)
Constant	-3.568***	-3.573***	-3.565***	-3.529***	-3.544***
	(0.191)	(0.194)	(0.185)	(0.175)	(0.194)
Observations	64,312	64,312	64,312	64,312	64,312
chi2	6274	7231	6553	7732	6231
p	0.0000	0.0000	0.0000	0.0000	0.0000
Mc Fadden Pseudo R^2	0.0413	0.0401	0.0411	0.0407	0.0401
N_clust	40	40	40	40	40

Notes: Dependent variable: Whether the firm is a discouraged borrower; Independent Variables: requirement to obtain third party approval for a dismissal; Industry (dummy variables for Construction, Manufacturing, Services); interaction of these variables (M=Manufacturing, C=Construction, T=Trade, S=Service).

Independent and control variables not reported in the table: Firm characteristics (dummy variable for Micro firms); Age of the firm (dummy variable for younger than 2 years, between 2 and 5 years, between 5 and 9 years); Firm performance (categorical variable for change in labour costs); Firm sources of finance (dummy variable for Retained earnings, Trade credit, Leasing and Equity), Macroeconomic controls (change in GDP, unemployment rate, Herfindahl-Hirschman Index of bank concentration, industry risk perceived by banks, and Bank Lending Survey index).

All regressions use sampling weights that adjust the sample to be representative of the population. Robust standard errors appear in parentheses.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table 6A Economic Effects – Obtaining Credit

	No (0)	Yes (1)
Flexibility in extending the workweek for seasonal needs	74.38%	69.41%

	No (0)	Yes (1)
Restrictions on night work	75.55%	62.81%

	No (0)	Yes (1)
Restrictions on weekly holidays	69.26%	73.69%

	1 month	6.5 months
Notice period after 1 year (2010_2014)	79.78%	64.27%

	No (0)	Yes (1)
Third party approval for one dismissal	71.57%	38.59%

Table 6B Economic Effects – Discouraged Borrowers

	No (0)	Yes (1)
Flexibility in extending the workweek for seasonal needs	6.62%	5.21%

	No (0)	Yes (1)
Restrictions on weekly holidays	5.26%	6.07%

	1 month	6.5 months
Notice period after 1 year (2010_2014)	4.08%	6.37%

	1 month	8.7 months
Notice period after 5 years (2009_2014)	3.62%	6.03%

	No (0)	Yes (1)
Third party approval for one dismissal	5.15%	10.06%

Appendix: Detailed Descriptive Statistics for the Dependent Variables at Country Level

Variable	Austria				Belgium				Germany				Spain				Finland			
	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max
Flexibility in extending the workweek for seasonal needs (WBO)	5,716	1	1	1	5,734	1	1	1	13,353	1	1	1	13,122	1	1	1	5,205	1	1	1
Restrictions on night work (WBO)	5,716	0	0	0	5,734	0	0	0	13,353	0	0	0	13,122	1	1	1	5,205	0	0	0
Restrictions on weekly holidays (WBO)	5,716	0	0	0	5,734	1	1	1	13,353	0	0	0	13,122	0	0	0	5,205	0	0	0
Notice period after 1 year (2010_2014_WBO)	5,513	2	2	2	5,532	5.49	5	5.71	12,352	4	4	4	12,118	2.50	2.14	4.3	5,105	4.33	4.3	4.33
Notice period after 5 years (WBO)	5,716	2	2	2	5,734	6.57	6	6.86	13,353	8.68	8.67	8.7	13,122	2.63	2.14	4.3	5,205	8.67	8.67	8.7
Notice period after 10 years (2010_14_WBO)	5,513	2	2	2	5,532	8.78	8	9.14	12,352	17.33	17.3	17.33	12,118	2.50	2.14	4.3	5,105	17.33	17.3	17.33
Third party notification for one dismissal (WBO)	5,716	1	1	1	5,734	0	0	0	13,353	1	1	1	13,122	1	1	1	5,205	1	1	1
Third party notification for collective dismissal (WBO)	5,716	0	0	0	5,734	0	0	0	13,353	0	0	0	13,122	0	0	0	5,205	0	0	0
Third party approval for one dismissal (WBO)	5,716	1	1	1	5,734	0	0	0	13,353	1	1	1	13,122	1	1	1	5,205	1	1	1

Variable	France				Ireland				Italy				Netherlands				Portugal			
	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max	Obs	Mean	Min	Max
Flexibility in extending the workweek for seasonal needs (WBO)	13,533	0	0	0	5,208	1	1	1	13,513	1	1	1	6,617	1	1	1	5,824	1	1	1
Restrictions on night work (WBO)	13,533	0	0	0	5,208	0	0	0	13,513	1	1	1	6,617	1	1	1	5,824	0	0	0
Restrictions on weekly holidays (WBO)	13,533	1	1	1	5,208	0	0	0	13,513	0	0	0	6,617	0	0	0	5,824	1	1	1
Notice period after 1 year (2010_2014_WBO)	12,532	4.33	4.3	4.33	5,107	1	1	1	12,509	6.50	6.5	6.50	6,365	4.33	4.3	4.33	5,572	4.29	4.29	4.30
Notice period after 5 years (WBO)	13,533	8.68	8.67	8.7	5,208	4	4	4	13,513	6.50	6.5	6.50	6,617	8.67	8.67	8.70	5,824	8.58	8.57	8.60
Notice period after 10 years (2010_14_WBO)	12,532	8.67	8.67	8.7	5,107	6	6	6	12,509	8.67	8.67	8.70	6,365	13.00	13	13.00	5,572	10.71	10.7	10.71
Third party notification for one dismissal (WBO)	13,533	0	0	0	5,208	0.71	0	1	13,513	0.48	0	1	6,617	1	1	1	5,824	1	1	1
Third party notification for collective dismissal (WBO)	13,533	0	0	0	5,208	0	0	0	13,513	0	0	0	6,617	1	1	1	5,824	0	0	0
Third party approval for one dismissal (WBO)	13,533	1	1	1	5,208	1	1	1	13,513	1	1	1	6,617	1	1	1	5,824	1	1	1

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

Daniela Maresch
Institute for Innovation Management, JKU Linz, Austria, Germany; daniela.maresch@jku.at

Annalisa Ferrando
European Investment Bank, Luxembourg, Luxembourg; email: a.ferrando@eib.org

Gregory F. Udell
Kelley School of Business, Indiana University; email: gudell@indiana.edu