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Regional Favoritism and Access to Credit

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Abstract

We examine the effect of regional favoritism on the access of firms to credit. Using firm-level data on a large sample of 29,000 firms covering 47 countries, we investigate the hypothesis that firms in the birth regions of national political leaders have better access to credit. Our evidence suggests that firms located in birth regions of political leaders are less likely to be credit constrained. The effect takes place through the demand channel: firms in leader regions feel less discouraged in applying for loans. We find no evidence, however, of preferential lending from banks to firms in leader regions. Thus, regional favoritism affects access to credit through differences in perceptions of firm managers, not deliberate changes in the allocation of resources by political leaders.

JEL Codes: D72, G21.

Keywords: regional favoritism, access to credit, borrower discouragement.

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“If the man at the top comes from a certain area of Zambia... you find that the people who come after him are all from the same area... It is just a matter of helping someone because he is from the area, do[ing] a favor for him.”

Daniel Posner, *Institutions and Ethnic Politics in Africa*

1. Introduction

Credit constraints on firms are a key obstacle to economic development. A large body of evidence suggest that better access to credit allows firms to exploit investment opportunities and improve their productivity (Gatti and Love, 2008; Gorodnichenko and Schnitzer, 2013; Popov, 2014; Rodriguez-Pose et al., 2021). Impediments to access to credit hurt firm growth and their likelihood of survival, which may ultimately lower economic growth.

Research on access to credit has identified many determinants. Two large categories are *firm characteristics* (Beck and Demirgüç-Kunt, 2006 on firm size; Mertzanis, 2017 on firm ownership) and *country features* such design of legal systems and institutions design (Cingano et al., 2016; Distinguin, Rugemintwari, and Tacneng, 2016). A handful of works find that *politics* may drive access to credit, showing the existence of electoral cycles in bank lending (e.g. Dinc, 2005; Carvalho, 2014). Incumbent politicians can influence bank lending behavior (particularly state-owned banks) to enhance their chances of reelection.

Evidence of political interference in access to credit raises the issue of whether regional favoritism affects lending. The general view in the literature is that political leaders tend to favor their home regions, i.e. the leader’s birthplace region enjoys preferential policy treatment with regard to allocation of national resources (Burgess et al., 2015; Do, Nguyen, and Tran, 2017; Kung and Zhou, 2021; Mu and Zhang, 2014).

Motivations for regional favoritism include providing support to family and clan members, ethnic favoritism, and securing loyalty in the leader’s political stronghold. Non-

democracies are especially prone to favoritism as such systems lack effective checks and balances to prevent it. Favoritism also arises in democracies, however, as the election process incentivizes political leaders to curry electoral favor in their geographic strongholds. Hodler and Raschky (2014) and De Luca et al. (2018) show that regional favoritism is a global phenomenon regardless of political system.¹

Regional favoritism takes various forms including transfers, provision of public goods and localized state-owned firms (Larcinese, Rizzo, and Testa, 2006; Moser, 2008; Kramon and Posner, 2013). It generates economic benefits for targeted firms by favoring firm investment (Guo et al., 2021) and firm performance (Faccio and Parsley, 2009), even if such policies do nothing to engender optimal allocation of resources within the country and fail to deliver gains in the aggregate.

We thus ask whether regional favoritism affects access to credit. To investigate whether firms located in the home region of the political leader have a better access to credit than other firms, we draw from firm-level data of the World Bank Enterprise Survey, a large survey of firms that captures access to external financing. By combining information on firm financing with data on the birthplaces of national political leaders (at the first-order administrative region level), we construct a sample of 29,456 firms operating in 47 countries.

This study contributes to the economic influence of regional favoritism by extending the research on the perceptions of economic agents. Specifically, we challenge the traditional hypothesis on economic outcomes of regional favoritism, which considers that the changes result from deliberate actions by leaders to promote their home regions.

While the traditional hypothesis makes sense in frameworks where outcomes depend solely on decisions of the authorities, it may not apply to situations where economic changes

¹ For evidence regarding European democracies, see e.g. Baskaran and Lopes da Fonseca (2021) for Germany, Carozzi and Repetto (2016) for Italy, and Fiva and Halse (2016) for Norway.

result from changes in the perceptions of the inhabitants of the home regions of their political leaders that involve no action on the part of such leaders. Posner (2005, p. 96), for example, illustrates this effect by explaining that people in Zambia have “come to expect that when you become President, the people of your area will benefit a lot.” Put simply, expectations of economic agents can change without any deliberate policy action from the leader.

It therefore seems appropriate to examine the influence of regional favoritism by disentangling its effects on allocation of resources and the perception of potential borrowing firms’ future chances. A large strand of literature shows that optimism affects economic behavior (e.g. Puri and Robinson, 2007; Youssef and Luthans, 2007). In line with evidence, expecting economic support from the leader in his home region can change the behavior of economic agents in ways that can be misinterpreted as the *outcome* of direct political influence from leaders.

The analysis of the effects of regional favoritism on access to credit provides a unique opportunity to distinguish both types of effects, *allocative effects* and *perception effects*, for theoretical and empirical reasons. From a theoretical perspective, access to credit is conditional to the allocation of resources through loan approval, and to the perception of economic agents through borrower discouragement. On one hand, access to credit is subject to the willingness of banks to grant loans. As such, it is conditional to the behavior of banks under the influence of political leaders. Governments can exert direct influence on state-owned banks, but they can also affect the lending behavior of private banks for instance by tightening prudential supervision or providing easier access to the public-entity loan market (e.g. Delatte, Matray, and Pinardon-Touati, 2020). Such political influence may be more likely to occur in less democratic countries since they do not have effective checks and balances restricting this behavior. On the other hand, access to credit also depends on the behavior of borrowers. Firms may refrain from applying for a credit if they expect that their loan application will be rejected

(Chakravarty and Xiang, 2013). Perceptions of firms can consequently influence borrower discouragement. Thus, managers of firms in a leader's home region may expect higher rates of loan acceptance due to the regional link with the leader even without any political involvement in the lending decision.

From an empirical perspective, we exploit the richness of our dataset to disentangle the allocative effects and perception effects of regional favoritism. To measure access to credit, we follow the approach of Popov and Udell (2012) and León (2015), who define a firm as credit constrained if the firm applied for credit and was rejected or did not apply for loans because it felt discouraged. This allows us to separate out regional favoritism effects from loan approval and borrower discouragement. We can thus disentangle the allocative and perception effects in the relation between regional favoritism and access to credit, allowing us to investigate how regional favoritism affects access to credit and identify the mechanisms through which this effect occurs.

By way of preview, we find that regional favoritism affects access to credit. Firms located in the region of the incumbent leader have lower constraints in accessing credit relative to other firms. This effect takes place through borrower discouragement, i.e. firms located in the region of the national leader are less likely to feel discouraged from applying for credit than firms in other regions. In contrast, no impact of regional favoritism is found for loan approval, i.e. firms in leader regions do not receive preferential lending from banks. Thus, this work provides evidence that regional favoritism affects the perceptions of economic agents but does not influence the allocation of resources by leaders in the context of access to credit.

Our paper contributes to the strand of literature on regional favoritism by investigating the role of regional favoritism in access to credit. This extends previous work on the impact of regional favoritism through other factors such as nighttime light intensity, infrastructure projects, and public transfers (Hodler and Raschky, 2014; Carozzi and Repetto, 2016; Do,

Nguyen and Tran, 2017). The analysis of regional favoritism on access to credit constitutes an important step toward understanding how regional favoritism affects economic outcomes. We have a theoretical and empirical framework in which to analyze the effects of regional favoritism on the allocation of resources by authorities and the perceptions of economic agents.

We also contribute to the empirical literature on determinants of access to credit. A large set of potential determinants have been scrutinized at both the firm level and the country level, including economic and institutional factors. We add to this body of analysis by focusing on the key policy issue of regional favoritism, bolstering the view that political factors can affect access to credit as shown for the existence of electoral cycles in bank lending (Dinc, 2005; Englmaier and Stowasser, 2017).

The remainder of the paper proceeds as follows. In the next section, we present the background of the research question. Section 3 explains the data and methodology. Section 4 discusses the main results. Section 5 contains the additional estimations. Section 6 presents the robustness checks. Section 7 concludes.

2. Background

2.1 Regional favoritism

Distributive politics, defined as the allocation of public resources by governments based on political considerations targeted towards certain groups, is a central topic in political science and economics literature. Numerous studies show that political leaders allocate more favorably based on such reasons as political connections, electoral outcomes, ethnicity, and geographic region affiliations (Fourinaies and Mutlu-Eren, 2015; Jiang and Zhang, 2020; Larcinese, Rizzo, and Testa, 2006). Regional favoritism is a form of distributive politics that involves the redistribution of political resources in favor of the birth region of political leaders.

Hometown identity is a well-documented component of self-identity (Chen and Li, 2009). As noted in Zhu et al. (2022), relationships based on shared social characteristics create affinity and common attraction that can foster favoritism. Guo et al. (2021) explain three ways through which hometown identity might facilitate hometown or regional favoritism. First, hometown, as a marker of place of birth and origin, creates a label that causes one to share similar identity with others born in the same place, thereby increasing the tendency to help those with the same label relative to individuals sharing different labels. Second, group identity makes people more likely to cooperate and contribute altruistically in ways that enhance their personal reputation. Third, shared geographical identity is deeply linked with similar cultural identity. This can promote cooperation among members in a group because it is easier to establish mutual trust and reduce information asymmetries. Shared identity, in the form of place of birth, may thus lead political leaders to confer economic benefits in favor of firms located in their regions of birth.

A recent set of works has put into evidence the economic effects of regional favoritism. In a cross-country study, Hodler and Raschky (2014) provide evidence of the existence of regional favoritism. They show that it leads to higher economic activity, measured by nighttime light intensity, in the birth region of the current political leader during the leader's term of office. However, this effect fades away as the tenure of the political leader ends. They further show that the strength of regional favoritism varies according to the quality of institutions and education level of citizens.

Several studies analyze the effects of regional favoritism in a single-country framework. Do, Nguyen, and Tran (2017) find evidence of hometown favoritism in Vietnam. They show that government officials' hometowns experience an increase in the number of infrastructure projects within three years after the official comes to power. This effect, they document, is pervasive across all ranks. In another Vietnam study, Vu and Yamada (2021)

study the behavior of firms in response to hometown favoritism by politicians. They find that soon after a politician assumes office, the number of firms in the home district of the politician increases. Looking at Italy, Carozzi and Repetto (2016) examine the allocation of central government transfers and find evidence of hometown bias. Their main finding is that transfers per capita are larger to the birth towns of government legislators.

Guo et al. (2021) examine the effects of governors' hometown favoritism on corporate investment among Chinese firms. They find evidence that firms located in the hometown of the incumbent governor make higher investments.

Asatryan et al. (2021), employing a worldwide sample, report that firms located in the birth region of political leaders grow in size and become productive. These effects, however, vanish after the leader leaves office.

2.2 Regional favoritism and access to credit

Access to credit is a two-dimensional issue involving the behavior of banks through loan granting and the behavior of firms through the demand for loans.

Regarding bank behavior, we assume that regional favoritism exerts a beneficial influence on loan granting in leader regions. Starting with Nordhaus (1975), a growing body of research suggests that incumbent governments manipulate economic resources for various purposes. Governments, in turn, can channel financial resources to targeted groups (Bussolo et al., 2021; Claessens, Feijen, and Laeven, 2008). Firms located in the birth region of the leader are one such targeted group. Shared identity, in the form of place of birth, can lead political leaders to provide economic benefits in favor of firms located in their birth region.

This hypothesis accords with the empirical findings that regional favoritism is linked to firm investment (Guo et al., 2021), firm performance (Faccio and Parsley, 2009), and tax avoidance (Chen et al., 2019). Governments have political influence on banks and can

manipulate bank lending. Studies show that they can either exert direct control on state-owned banks (Carvalho, 2014; Dinç, 2005) or indirectly influence private banks using a wide range of instruments such as threatening banking license withdrawal, changing banking regulation, or controlling access to the public entity loan market (Kroszner and Strahan, 1999; Brown and Dinç, 2005). Such political intervention is more likely to occur in less democratic countries, where there are no effective checks and balances or free media to limit such manipulation. However, it can also take place in democratic countries, as shown by Delatte, Matray, and Pinardon-Touati (2020) in France. We thus expect banks to be less stringent with loan applications from firms in leader regions.

Turning to the behavior of borrowing firms, we find a large strand of literature dealing with discouraged borrowers, i.e. potential borrowers that refuse to apply for loans based on their anticipation of a negative response from lending banks (Chakravarty and Xiang, 2013). Borrower discouragement represents a key issue in access to credit for firms. It is based on borrower expectations that can lead to suboptimal behavior as such firms self-exclude from the credit market by overestimating the probability of loan rejection. Wernli and Dietrich (2022) illustrate this concern with a study on Swiss firms in which they show that credit-constrained firms are six times more likely to feel discouraged from applying for credit than rejected. They further find that nearly 60% of the discouraged firms would have obtained a loan if they had submitted a formal application.

We hypothesize that regional favoritism reduces borrower discouragement and thus enhances access to credit. This accords with the current “axiom of politics” that political leaders favor people with whom they share regional identity (De Luca et al., 2018). As noted by Posner (2005, p. 95), this favoritism extends to bank lending. In his Zambian survey, respondents reported that “whereas loan officers tend not to be particularly stringent with applicants from their own groups, applicants from other groups sometimes find that the lending institution will

‘work to rule’ [i.e. follow guidelines to the letter] instead of using common sense and being flexible as they do when they deal with their favorite applicants.” In other words, people see bank loan approval to be more difficult when one does not belong to the favored region.

Thus, firms located in the region of the national leader would be more confident to submit credit applications since they know they are operating in a favored region and hence expect that the likelihood of loan rejection is lower.

To sum up, we propose hypotheses according to which regional favoritism improves access to credit by favoring loan acceptance and reducing borrower discouragement. Thus, regional favoritism should influence the behavior of banks both through interference of the authorities and the expectations of loan approval affecting firm behavior.

3. Data and methodology

3.1 Data

To examine how regional favoritism affects access to credit, we combine firm-level data on access to credit from the World Bank Enterprises Survey (WBES) with data on the birth regions of national political leaders from the Political Leaders’ Affiliation Database (Dreher et al., 2021).

After excluding missing information on the birth region of political leaders and surveys for which responses on firm credit experiences are unavailable, our final sample consists of 29,456 firms from 47 countries over the period 2006–2019 (83 country-year surveys). Table 1 reports the coverage of firms by country and year of the survey. For our sample period, 24 countries were surveyed more than once. In these countries, different firms are interviewed for each survey. We observe cross-country differences in the coverage of firms. Russia has the highest number of surveyed firms (3,437) and Azerbaijan the lowest (78).

3.2 Measuring credit constraints

Data on access to credit come from the WBES, a comprehensive and widely used firm-level survey dataset conducted by the World Bank. Respondents to this cross-country survey are top managers and business owners. It thus captures many aspects of the operations of formal (registered) firms, including access to financing, performance, innovation, corruption, and institutional environment.

The WBES offers two advantages for our analysis. First, the survey questionnaires are standardized across countries with a common methodology, making them comparable in a cross-country analysis. Second, the surveyed firms are representative of the population of firms. They include large firms, but are mainly small and medium-sized enterprises with various ownership status and industry.²

To measure access to credit, we focus on a number of questions regarding firms' credit experience in the past year. We use these questions to classify firms into four categories. Category 1 includes firms with no need for loans. Category 2 consists of firms that need loans but refuse to apply because they feel discouraged (i.e. they failed apply because of perceived constraints such as "*unfavorable interest rates,*" "*complex application procedures,*" or "*did not think it would be approved*"). Category 3 includes firms that applied for a loan and received at least one line of credit. Category 4 gathers firms that applied for a loan and were rejected.

Following the approach of Popov and Udell (2012) and León (2015), we define a credit-constrained firm. We exclude firms without a need for loans (category 1) from our sample because it is impossible to ascertain if they are in fact credit constrained. A firm is defined as credit-constrained if it applied for a loan and was denied (category 4) or did not apply for credit because it felt discouraged (category 2). Firms with approved credit applications (category 3)

² For more information on the dataset, see <http://www.enterprisesurveys.org/data>.

are classified as credit-unconstrained. We then create the variable *Constrained* as a dummy equal to one if the firm is credit-constrained, and zero otherwise. Figure 1 illustrates the construction of this variable.

We construct two additional variables to explore whether credit constraints are influenced by loan approval, borrower discouragement, or both. We create the variable *Apply* as a dummy equal to one if the firm needed a loan and made a formal application for credit (categories 3 and 4), and zero if the firm needed a loan but did not apply because it was discouraged (category 2). This variable captures borrower discouragement.

We take loan approval into account by constructing the variable *Approved* as a dummy equal to one if the firm applied for loans and was approved (category 3), and zero if the firm's loan application was turned down (category 4).

Table 2 presents the summary statistics for the variables. We observe that approximately half of the firms in the sample are credit constrained (47.6%), suggesting that access to external financing is a major constraint for most firms. Loan approval rates are high (86.8%) for firms that apply for credit.

3.3 Leader's birth region

A key independent variable in our analysis is a measure of the birth region of the national political leader. To identify the region of birth of a country's political leader, we employ the Political Leaders' Affiliation Database (PLAD). This dataset, compiled by Dreher et al. (2021), contains comprehensive information on the birthplaces and ethnicities of the effective political leaders of 173 countries around the world. The exact starting and ending dates of the political leaders' tenure in power are provided in this dataset. The data follows the definitions in the Archigos Dataset on Political Leaders by Goemans et al. (2009).

We manually fill in missing information on political leaders with data from various online sources. We exclude from our sample political leaders born abroad and those for whom we could not find information about their place of birth. For instance, we exclude François Bozizé from our sample, the former president of Central African Republic (March 15, 2003 to March 24, 2013), because he was born in Gabon.

We carefully match the region of birth of the incumbent political leader with the exact region in which a firm is located according to the administrative region (ADM1) as reported in the WBES dataset. ADM1 regions are the first-order governmental administrative units that are directly below the nation state. These include regions, counties, provinces, districts, and subgovernmental units depending on the country. This matching allows us to identify if a firm is located in the leader's birth region. A region is identified as a leader region if the incumbent political leader of the country was born there. We construct the dummy variable *LeaderRegion* equal to one if the region in which a firm is located is a leader region, and zero otherwise. It is noteworthy to mention that most firms in the sample are small, meaning they have only one location. We therefore do not have identification issues to match a firm with the leader region.

Our final sample contains 67 national leaders from 47 countries. Table 2 shows that about 27% of the firms in our sample are located in leader regions.

3.4 Methodology

To test the hypotheses that firms located in the region of the political leader are less credit-constrained, we estimate probit regressions with the following model specification:

$$\Pr(Y_{ijk} = 1) = \Phi(\alpha + \beta \text{Leader region}_{ijk} + \delta \text{Controls}_{ijk} + \varepsilon_{ijk}), \quad (1)$$

where i indicates the firm, j the region, and k represents the country, Y_{ijk} captures the dependent variables (*Constrained*, *Apply*, and *Approved*), $Controls_{ijk}$ represents the set of control variables, Φ is the standard normal cumulative distribution, and ε is the error term.

The key independent variable is *Leader region*. Our identification strategy exploits the birthplace of the national leader and the location of firms. We compare access to credit for firms operating in the same country but are located in different regions. Everything else equal, we predict that firms located in the region of the leader have fewer constraints in accessing credit than firms in other regions of the same country. The coefficient on *Leader region* is therefore expected to be negative when explaining *Constrained*. A positive impact of regional favoritism on credit access should be reflected through increased loan applications from firms and higher likelihood of banks to accept loan applications. We thus expect a positive coefficient on *Leader region* when explaining *Apply* and *Approved*.

Based on previous works on access to credit (e.g. Beck and Demirgüç-Kunt, 2006; León, 2015; Mertzanis, 2017), we include controls at the firm level to control for observable firm-level heterogeneity. We control for the firm's *Age* and *Size* (measured as log of the number of permanent full-time employees). We add a variable accounting for the number of years of experience the top manager has in the sector (*Experience*). Legal status is taken into account through the inclusion of dummies equal to one whether a firm is a *Sole proprietorship* or *Partnership*. We also include dummy variables equal to one if the firm is owned by the government (*State-owned*), owned by foreigners (*Foreign owned*), if the financial statement is audited (*Audited*), whether a firm is an exporter (*Exporter*), and if the firm is part of a larger group (*Subsidiary*). Firms' geographical location is taken into account with a dummy equal to one if a firm operates in the capital city (*Capital city*). Finally, we include the perceived degree of corruption for the firm with a dummy equal to one if the firm perceives corruption to be a very severe or major obstacle, and zero otherwise (*Corruption*).

A potential concern is that the birth regions of leaders may be systematically different. For example, such regions may be more economically dynamic compared to other regions, which could also be correlated to the ability of firms to access external financing. To capture region-specific differences in the level of development, we add three variables. First, we take into account the recent performance of firms in a region with the variable *Sales growth*, which captures the average regional-level growth in firm sales over the past three years. Second, we include the extent to which electricity is a constraint on operations of firms in the region (*Electricity*). Third, we add *Informal credit*, measured as the average number of firms in a region where some of working capital or fixed assets is funded by money lenders, friends, or relatives. In developing countries, strong social networks within some regions may indeed encourage the use of informal finance as a means to alleviate firms' financing constraints (Mertzanis, 2019).

We also include country-level controls to control for country-specific characteristics that might affect access to credit. *GDP growth* and *Inflation* are intended to capture short-run macroeconomic situations. We control for financial development with the ratio of domestic credit to the private sector to GDP (*Credit/GDP*). All these country-level variables are collected from the World Development Indicators. We finally add *Rule of law*, extracted from the World Governance Indicators, to capture quality of institutions.

4. Results

4.1 Baseline estimations

To investigate whether firms operating in the birth region of the national political leader have better access to credit relative to other firms in the country, we perform four estimations to consider several sets of control variables and test the sensitivity of the results. Table 3 reports

the estimations. In column (1), we consider only *Leader region* and year, industry, and country fixed effects in the set of explaining variables. In columns (2)-(3), we add firm-level control variables, region-specific controls, as well as the country-level controls. Given that some countries in our sample are surveyed more than once, we include country \times year fixed effects in column (4) so that we can compare at the same time firms of the same country but located in different regions.³ We report the marginal effects in all estimations to measure both statistical and economic significance.

We find that *Leader region* is significantly negative in all estimations. This finding suggests that firms located in the birth region of the national leader experience lower credit constraints as compared to other firms of the country. The results confirm that firms in leader regions are less likely to be credit-constrained than other firms operating in different regions in the same country. Therefore, we conclude there is regional favoritism in access to credit.

For economic significance, we consider the coefficient of *Leader region* in the specification in column (4). We observe that the probability to be credit-constrained for firms located in the birth region of the national leader is about 1.4 percentage points lower than for other firms. This effect should be compared with the fact that the percentage of credit-constrained firms in our sample is about 47%, and that we compare firms located in the same country but operating in different regions. In comparison with other firm- and country-level characteristics, the impact of leader region is meaningful. For example, being a subsidiary reduces the likelihood of experiencing credit constraints by 3.8 percentage points.

³ An alternative strategy would be to add in country-region fixed effects to compare firms in the same region of the same country at points in time when the leader is from that region compared to other regions. However, our sample has a limited number of countries with two waves of survey results associated with two different leaders and with the leaders coming from two different regions.

4.2 Exploring the channels of regional favoritism

Having established the effect of regional favoritism on access to credit, we turn our attention to understanding the channels through which this effect works. Specifically, we want to examine whether the effect arises through the behavior of banks favoring loan approval, the behavior of firms by reducing borrower discouragement, or both. Greater access to credit could be the consequence of effective changes in loan approval for the lenders, but it could also be the outcome of changes in the expectations of loan approval for the borrowers.

We first investigate whether regional favoritism influences the firm decision to apply for a bank loan. The perception that political leaders favor people from their own region has become an “axiom of politics” (Posner, 2005). This widespread perception may be paralleled with an expectation of firms located in favored regions that banks may also favor them by relaxing their lending protocols. Consequently, these firms can feel less discouraged from applying for credit. We can then predict a positive relationship between regional favoritism and the firm’s likelihood of requesting credit when needed.

To examine this hypothesis, we redo our estimations by using *Apply* as the dependent variable. The results are reported in columns (1)-(2) of Table 4. We consider two specifications of the set of controls with country \times year fixed effects in column (2). *Leader region* is positive and significant in all regressions. Thus, we show that firms operating in the region in which the national leader was born are more likely to file a loan application. The birth region of the political leader has also an economically sizeable effect. Based on the full specification in column (2), firms located in the leader region are about 2.2 percentage points more likely to apply for credit compared to firms in other regions in the country.

We find clear empirical support to the view that regional favoritism eases access to credit by reducing borrower discouragement. The presence of a leader born in the region exerts an impact on the perceptions of borrowing firms by influencing their decision to apply for a loan.

We thus conclude that there is a beneficial impact of regional favoritism on the behavior of firms in terms of access to credit.

Looking next to bank behavior, we note that studies on regional favoritism suggest political interference is more likely in the birth region of the political leader with respect to public transfers and infrastructure projects. We therefore posit that regional favoritism manifests in the form of preferential lending as banks are in a position to relax credit constraints for firms located in the political leader's birth region.

We investigate this hypothesis by redoing our estimations with *Approved* as the dependent variable. We perform this analysis on the subsample of firms that applied for a loan in order to disentangle the loan approval effect from the borrower discouragement effect. The results are displayed in columns (3)-(4) of Table 4. We again present two specifications of the set of controls with country \times year fixed effects in column (4).

We find that *Leader region* is not significant in all regressions. We do not find any statistically significant evidence of regional favoritism in banks' credit approval decisions. This finding indicates that firms located in the birth region of the home leader do not get preferential lending from banks. Hence, regional favoritism is not exercised through lender behavior.

Taken together, these patterns provide two major findings. First, the positive influence of regional favoritism on access to credit only takes place through reduced borrower discouragement. It does not go through preferential lending of banks increasing loan approvals.

Second, expectations of changes matter more than effective changes in the relation between regional favoritism and access to credit. It seems that regional favoritism leads to high expectations such that it has a beneficial impact on firm managers even if the effect only influences expectations. As explained above, given that pessimism leads to borrowing firms underestimating their actual chances of getting a loan, this mechanism on expectations is positive for access to credit.

5. Additional estimations

In this section, we complement our main results by examining whether they are affected by the characteristics of the firm, the leader, and the country.

5.1. The influence of firm characteristics

The results reported so far show the beneficial influence of regional favoritism on access to credit. We have, however, performed our investigation for all types of firms without considering if this impact differs across firms. What is the influence of firm-level heterogeneity on this relation?

The literature suggests that small and young firms are more likely to be credit-constrained due to the lack of transparency about their business (e.g. Beck and Demirgüç-Kunt, 2006; Devos et al., 2012). In accordance with this finding, we have shown above that larger firms and older firms are less credit-constrained in the baseline estimations. It is therefore important to check whether regional favoritism has a greater impact on access to credit for small and young firms. If regional favoritism plays a greater influence on small and young firms in enhancing their access to credit, its beneficial impact through access to credit would be particularly high at the aggregate level. In other words, regional favoritism would have a greater positive outcome if it has a stronger impact for the most credit-constrained firms. To the extent regional favoritism improves access to credit by altering expectations about loan, it is *not* suboptimal for access to credit: it is not associated with the misallocation or waste of resources that can occur with political initiatives.

We conduct subsample analyses to examine whether the effect of regional favoritism on access to credit varies across groups of firms. For size, we follow the WBES classification to

classify firms into three groups: *Small* if it has between 5 and 19 employees, *Medium* if the number of employees is between 20 and 99, and *Large* if the number of employees is 100 or more. Regarding firm age, we split the sample into young and old firms based on median age. The results are presented on Table 5. Columns (1)-(3) report results for firm size. Columns (4)-(5) present results for firm age.

We find that the effect of regional favoritism varies with firm size. *Leader region* is significantly negative for medium and large firms (with a greater coefficient for large firms), but not significant for small firms. The effect of regional favoritism is also conditional to the age of the firm. *Leader region* is significantly negative for old firms, but not significant for young firms.

When considering the channels through which regional favoritism affects access to credit, we obtain similar findings for borrower discouragement: large and old firms are more likely to submit credit applications. There is no difference across firms for loan approval. The coefficient of *Leader region* is not significant when explaining *Approved* no matter the firm size or age.

Thus, our estimations show that the effect of regional favoritism on access to credit varies with the size and the age of the firm. Regional favoritism works to increase access to credit for larger and older firms, i.e. it is most beneficial to the least credit-constrained firms. This conclusion moderates the beneficial economic outcome of regional favoritism through access to credit. Indeed, we have shown that this effect favors access to credit – and does it through better expectations of loan approval, i.e. without distorting the allocation of resources. However, this effect on the expectations is most pronounced for the least credit-constrained firms.

5.2 The influence of leader characteristics

A growing body of literature documents that the tenure and personal traits of political leaders affect policy choices and economic outcomes (Jones and Olken, 2005; Dreher et al., 2009; Francois, Panel and Weill, 2020). Thus, we examine whether the characteristics of the leader play a key role in influencing the impact of regional favoritism on access to credit by focusing on two leader characteristics: *tenure in office* and *educational background*.

We first consider the leader's tenure in office as number of years in office may influence the effect of regional favoritism on access to credit in two ways. First, long tenure increases the incentives for political leaders to misallocate public resources to special interest groups (McNutt, 1997; Garcia-Vega and Herce, 2011). It can thus be associated with greater bank loan approval for firms located in the leader region. Second, if a leader remains a long time in office, expectations of economic agents that the leader may support his birth region may wane. This could be due to the fact that people may expect immediate benefits from their leaders as soon as they come to power, i.e. expectations of people may be higher in the early years of the leader's tenure and decline the longer the leader remains in power. In such case, the beneficial effect of the leader region on the decision of firms to apply for a bank loan would be especially high in the early years of tenure.

To examine the impact of tenure, we use data from Dreher et al. (2020) and split the sample of firms between long and short tenure based on the leader's number of years in office. We use the median tenure value (6.5 years) as the cutoff. We report the results in columns (1)-(2) of Table 6.

We find that the effect of regional favoritism on access to credit is observed only for the sample of firms facing leaders with a short tenure. Only these firms have a greater access to credit and lower borrower discouragement. Given that our main estimations show that the change in expectations of economic agents is the main mechanism for the increased access to credit, we interpret this finding to mean that firms located in leader regions expect immediate

benefit from their leaders. As the leader remains in office for a longer period, the expectations tend to wane.

We next consider the educational background of the leader. We expect a positive impact of education in economics of the leader on access to credit for firms in leader regions. We posit that this effect is reflected through a positive impact on bank loan approval because leaders with an education in economics should better understand the economic tools, including banks, they can use to reach their objectives. In a related vein, we expect a positive impact on the decision of firms to apply for a loan since firm managers may expect leaders with economics education to make greater use of economic policy tools in supporting their home regions.

We combine data from Baturo (2016) with hand-collected online data on the biographies of leaders to have information on the educational background of the leaders of our sample. We create the variable *Education in economics* as a dummy variable that is equal to one if the leader has a higher education degree in economics or management, and zero otherwise. We use this variable to split our sample into leaders with and without education in economics. The results are presented in columns (3)-(4) of Table 6.

In both estimations, we find statistically significant coefficients in Panels A and B explaining respectively *Constrained* and *Apply*. We do not find significant coefficients for *Approved* in Panel C. This finding suggests that regional favoritism fosters access to credit in leader regions, irrespective of whether the leader has an education in economics.

5.3 The influence of country-level characteristics

Country-level features can influence the effect of regional favoritism on a firm's access to credit. We consider two characteristics, one cultural and one institutional, in our analysis.

First, we study the role of *collectivism*, a cultural orientation relevant in explaining the behavior of an individual in a group, on our findings. Collectivism prioritizes group goals over

individual's own goals, stresses harmony within groups, and defines the self in relation to the group (Triandis, 1995). In contrast, individualistic cultures act in a self-serving manner rather in a way that best serves the needs of a group.

Collectivism can shape the role of regional favoritism on access to credit through its strong group ties and emphasis on interdependence of members. It can strengthen the positive effect of regional favoritism on access to credit. We thus expect greater political interference from a political leader in a collectivistic society to support his group of origin. In a related vein, economic agents in collectivistic societies are more likely to expect preferential treatment from a political leader born in their region because of the greater importance given to group ties.

To test this hypothesis, we conduct the analysis by considering separately individualistic and collectivist societies. We measure collectivism using the individualism-collectivism dimension of Hofstede's cultural dimensions. Based on the median, we partition the sample into individualistic and collectivist cultures. We conduct the estimations separately for both types of cultures for comparison. The results are reported in Table 7. In column (1), we present results for individualistic oriented cultures and column (2) reports the estimation results for collectivist cultures.

We find that the coefficient of *Leader region* is significantly negative for collectivist cultures (when explaining *Constrained* and *Apply*), while it is not significant for individualistic cultures. We furthermore observe no significant coefficient for *Leader region* when explaining *Approved* as in the main estimations. The impact of regional favoritism on access to credit is only observed in countries with collectivist cultures.

This finding accords with the view that regional favoritism is based on ties between the political leader and its region of birth. It helps understanding the influence of regional favoritism on access to credit by identifying the influence of culture.

Next, we analyze the influence of the *degree of democracy*. Since regional favoritism increases access to credit by reducing borrower discouragement, we ask whether this effect is lower in more democratic countries. Namely, a more democratic country is associated with checks and balances that reduce the leader's own room to manoever in policy matters. If so, regional favoritism should be lower in more democratic countries. The leader has a lower influence on the bank loan approval process and economic agents expect less support from the leader in a more democratic political system. In opposition to this prediction, some recent studies suggest that regional favoritism might be even be more prevalent in democracies (Carozzi and Repetto, 2016; Baskaran and Lopes da Fonseca, 2021).

We use the democracy index from the Polity5 database to split our sample based on the median value of the index into two subsamples: high democracy, and low democracy. We display the results in columns (3)-(4) of Table 7.

We first observe that *Leader region* is significant and positive when explaining *Apply* and not significant when explaining *Approved* for both subsamples of countries. These results suggest that the degree of democracy does not affect the influence of regional favoritism on access to credit, since our results on the channels are similar for both groups of countries. We nonetheless observe a difference when explaining *Constrained*, since the coefficient of *Leader region* is only significant and negative for countries with high democracy. In a nutshell, we find limited evidence on the influence of democracy on the relation between regional favoritism and access to credit.

6. Robustness checks

This section examines the sensitivity of the results from several perspectives. In all robustness tests, we consider the specification with all control variables and all fixed effects unless otherwise indicated. We report the results in Table 8.

6.1 Sample construction and sensitivity tests

Alternative measure of credit constraints: We perform estimations using an alternative measure of credit constraints. Following previous studies (e.g. Asiedu et al., 2013), we create the variable *Constrained(Alternative)*, a dummy equal to one if a firm cites access to credit as a moderate, major, or very severe obstacle, and zero otherwise. While this variable does not capture the same information as our main dependent variable, it provides a relevant alternative measure to check the robustness of our findings. We redo the estimation with this variable and report the results in column (1). We again find a significantly negative coefficient for Leader region, confirming our finding of regional favoritism in access to credit.

Excluding state-owned firms: Our sample includes both private firms and state-owned firms. In comparison to private firms, the government is more likely to get involved with state-owned firms. Inclusion of state-owned firms therefore could influence our findings. Excluding state-owned firms from the sample and redoing the estimations reported in column (2), we find that regional favoritism still favors access to credit, suggesting that state-owned firms do not drive our findings.

Excluding Russia and China: Our results can be driven by the countries with the largest number of observations in the sample. To check this potential concern, we exclude the two countries with the largest number of observations, Russia and China, from the sample and redo the estimation. The results are reported in column (3). We continue to find that *Leader region* is significant and negative.

Within-country evidence: A potential critique of our cross-country analysis is the inappropriate control of the country-level characteristics. We include a large set of country controls in addition to country fixed effects so that we take into account this potential issue. Nonetheless, to provide an additional answer to this concern, we can perform our analysis by focusing on within-country evidence. To this end, we need countries in our sample with two waves of surveys associated with two different leaders (with the additional condition that the leaders come from two different regions).

Unfortunately, our dataset restricts the possibilities to perform such within-country evidence. As stressed above, we have only a limited number of countries with two different surveys. In addition, most of these countries have the same political leader or two political leaders from the same region, preventing us to perform such within-country evidence.

Colombia is the one country that provides the within-country evidence we seek. Colombia experiences a change in presidents during the survey period: Alvaro Uribe Velez, who served as president from 2002 to 2010 and Juan Manuel Santos Calderon, who served from 2010 to 2018. Both hail from different regions of Colombia. This therefore provides an interesting setting for us to examine the impact of regional favoritism within one country, holding other country-specific characteristics fixed.

We therefore redo our regression on the sample of firms operating in Colombia. It is reported in column (4). We include region fixed effects in our model. We observe that *Leader region* is again significant and negative. This analysis thus corroborates our finding of the beneficial influence of regional favoritism on access to credit.

Politically-connected firms: The literature suggests that political connections favor access to credit for firms (Houston et al., 2014; Infante and Piazza, 2014). We thus ask whether the impact of the leader region has been interpreted erroneously (in the sense that what is observed

is in fact the influence of political connections). To this end, we control for political connections with the variable *Political connections* defined as a dummy variable equal to one if a firm has secured (or attempted) a government contract in the past 12 months, and zero otherwise.

We report the results in column (5). We still find that *Leader region* is significant and negative. Thus, the influence of the region of the leader is not a consequence of the political connections of firms from this region.

6.2 Econometric concerns

Addressing potential sample selection bias: Our analysis focuses on the subsample of firms with a need for credit; we do not know whether firms without a need for credit may have been constrained if they applied for loans. This approach, however, could raise potential sample selection issues if the subsample of firms with a need for credit presents certain characteristics. To control for the potential selection bias in our sample, we employ the probit model with sample selection. The model, proposed by Van de Ven and Van Praag (1981), estimates a selection equation and an outcome equation. To improve identification, we follow Léon (2015) and employ two exclusion variables that could influence the need for credit financing but do not affect the loan approval decisions of banks. We use *Working capital*, which takes into account the share of goods and services paid for after delivery, and *Competition*, which captures the firm's perceived degree of competition from the informal sector. Column (6) presents the results. Despite the change in model specification, we obtain the same main findings, i.e. *Leader region* is significant and negative.

Placebo test: We conduct a placebo test to further address concerns that our results may be driven by other confounding factors. Specifically, we randomly assign a region in the country

as the birth region of the national political leader. If we find that the impact of this placebo leader region significantly affects firms' credit access, then our results are likely driven by omitted variables that coincide with the overall region. Column (7) reports the estimation results. We find a statistically insignificant coefficient, suggesting that our findings are less likely to be confounded by unobservable factors. This confirms the robustness of our finding.

Weighted estimations: As observed in Table 1, the coverage of firms varies significantly across countries. To control for the uneven sample sizes, we perform a robustness check by weighting our regressions by the inverse of the square root of the number of firms per country. This approach ensures that each country carries similar importance in our analysis. The results in column (8) suggest that our results are robust even after taking into account the issue of uneven sample sizes.

7. Conclusion

This paper addressed the impact of regional favoritism on access to credit. Firm-level data including information on access to credit were matched with data on the birth region of national political leaders to construct a sample of 29,456 firms operating in 47 countries. We considered whether firms located in the birth region of the political leader have greater access to credit than other firms in the same country.

Our two key results are as follows. First, we provide evidence of regional favoritism in credit access. We find that firms located in leader regions are less likely to be credit-constrained than firms in other regions of the same country. Second, we show that the beneficial effect of regional favoritism only takes place by lowering borrower discouragement. We do not observe any incidence of preferential lending for firms located in the birth region of the political leader.

We further document that regional favoritism increases more access to credit for larger

and older firms. It has a greater influence in the early years of the tenure in office of the leader, and is influenced by the presence of a collectivist culture.

Our findings therefore show that regional favoritism can take place through expectations of economic agents even if it does not affect the behavior of political leaders. Hence the effects of regional favoritism are detectable only in borrowers' beliefs, not in the actual bank lending process.

The literature suggests that expectations play an important role in economic outcomes. In the context of access to credit in which firms tend to overestimate their chances of having their loan application rejected, we show that expectations of better chances of loan approval play a major role and can lead to favorable economic outcomes.

We therefore provide some micro-level foundations to the findings of Hodler and Raschky (2014) of higher economic development in the home region of the political leaders. It can come from preferential treatment of public authorities, but we show it can also be the outcome of lower borrower discouragement.

Our research question has positive and normative implications. From a normative perspective, we do not provide support to establish independence between authorities and banks to avoid political interference in the lending decisions since there is no evidence that regional favoritism is detrimental. We do not observe that regional favoritism is suboptimal by generating a misallocation of financial resources on the credit markets as there is no change in the lending behavior. We also show that regional favoritism can be beneficial in reducing borrower discouragement, a major issue for credit markets.

From a positive perspective, it helps understanding why regions of origin of the national leaders enjoy more robust economic development. We provide evidence that these regions can have economic expansion through the better expectations of loan acceptance associated with the leader in power.

Our takeaway message is expectations matter when it comes to regional favoritism. A natural follow-up question to this work on how regional favoritism takes place through preferential allocation of resources toward the birth region of the leader would be to see how it affects the expectations of the economic agents of that region. In addition to better access to credit, regional favoritism could potentially influence such things as forecasts of earnings for firms and perspectives of economic opportunities for households.

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Figure 1.
Constructing firms' credit constraints

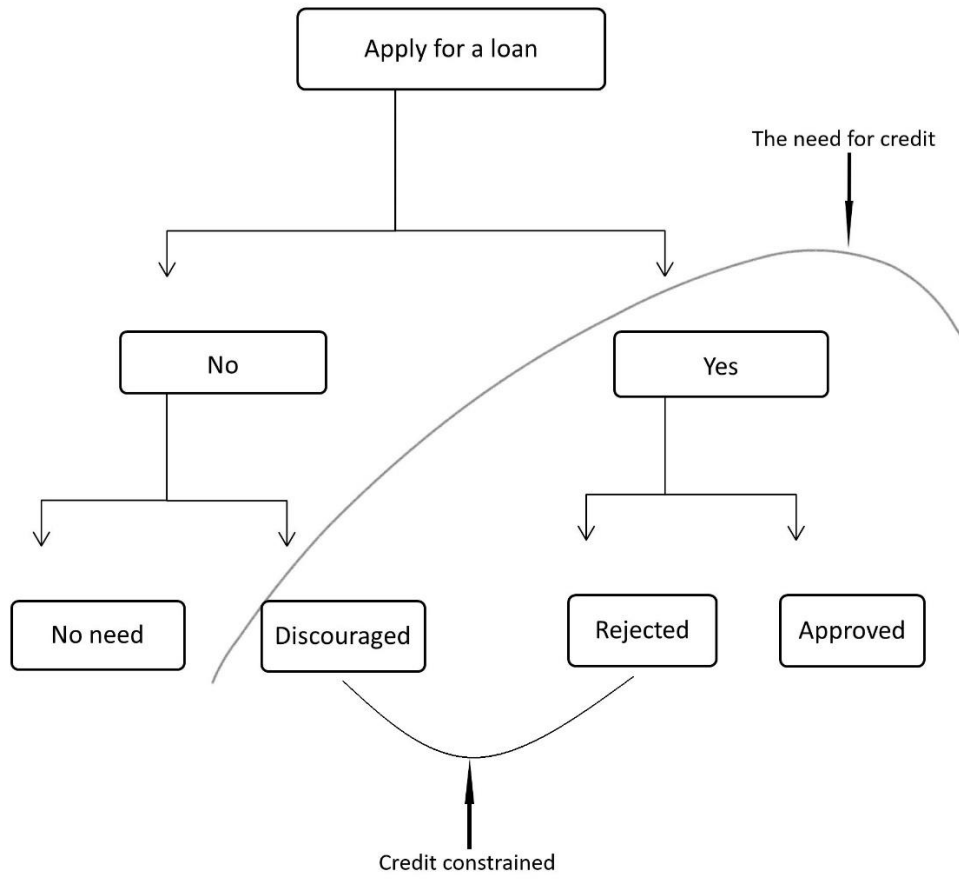


Table 1.
Coverage of firms by country and survey year

This table reports the number of firms by country and year of survey.

| | Survey year | | | | | | | | | | | | | Total | Number of surveys |
|--------------|-------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------------------|
| | 2006 | 2007 | 2008 | 2009 | 2010 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | | |
| Afghanistan | | | | | | | | 212 | | | | | | 212 | 1 |
| Azerbaijan | | | | | | | | | | | | | 78 | 78 | 1 |
| Belarus | | | 169 | | | | 192 | | | | | 307 | | 668 | 3 |
| Brazil | | | | 784 | | | | | | | | | | 784 | 1 |
| Bulgaria | | | | | | | 128 | | | | | | 52 | 180 | 2 |
| Burkina Faso | | | | 277 | | | | | | | | | | 277 | 1 |
| Burundi | | | | | | | | 116 | | | | | | 116 | 1 |
| Chile | 682 | | | | 700 | | | | | | | | | 1382 | 2 |
| China | | | | | | 1390 | | | | | | | | 1390 | 1 |
| Colombia | 744 | | | | 730 | | | | | | 730 | | | 2204 | 3 |
| Croatia | | 394 | | | | | | | | | | | | 394 | 1 |
| Ecuador | 432 | | | | 239 | | | | | | 234 | | | 905 | 3 |
| Ghana | | 402 | | | | | 521 | | | | | | | 923 | 2 |
| Guinea | 194 | | | | | | | | | | | | | 194 | 1 |
| Indonesia | | | | 875 | | | | | 804 | | | | | 1679 | 2 |
| Israel | | | | | | | 215 | | | | | | | 215 | 1 |
| Italy | | | | | | | | | | | | | 309 | 309 | 1 |
| Jordan | | | | | | | 230 | | | | | | 176 | 406 | 2 |
| Kyrgyz Rep. | | | | 146 | | | 137 | | | | | | 138 | 421 | 3 |
| Latvia | | | | | | | 62 | | | | | | 123 | 185 | 2 |
| Madagascar | | | | 263 | | | 211 | | | | | | | 474 | 2 |
| Malawi | | | | 96 | | | | 278 | | | | | | 374 | 2 |
| Malaysia | | | | | | | | | 505 | | | | | 505 | 1 |

| | | | | | | | | | | | | | | | |
|--------------|------|------|------|------|------|-------|------|-----|------|-----|------|-----|------|--------|----|
| Mali | 418 | | | | 173 | | | | | 105 | | | | 696 | 3 |
| Mauritius | | | | 148 | | | | | | | | | | 148 | 1 |
| Mongolia | | | | 287 | | | 243 | | | | | 298 | | 828 | 3 |
| Pakistan | | | | | | | 368 | | | | | | | 368 | 1 |
| Panama | | | | | 124 | | | | | | | | | 124 | 1 |
| Paraguay | | | | | | | | | | | 152 | | | 152 | 1 |
| Peru | | | | | 807 | | | | | | 745 | | | 1552 | 2 |
| Philippines | | | | | | | | | 258 | | | | | 258 | 1 |
| Portugal | | | | | | | | | | | | | 357 | 357 | 1 |
| Romania | | | | 250 | | | 304 | | | | | | 348 | 902 | 3 |
| Russia | | | | 618 | | 2,190 | | | | | | | 629 | 3437 | 3 |
| Rwanda | | | | | | | | | | | | | 230 | 230 | 1 |
| Serbia | | | | 270 | | | | | | | | | 169 | 439 | 2 |
| Sierra Leone | | | | | | | | | | | 110 | | | 110 | 1 |
| Slovakia | | | | 112 | | | 90 | | | | | | 129 | 331 | 3 |
| Slovenia | | | | 172 | | | 116 | | | | | | 177 | 465 | 3 |
| South Africa | 444 | | | | | | | | | | | | | 444 | 1 |
| Tajikistan | | | 206 | | | | 134 | | | | | | | 340 | 2 |
| Togo | | | | | | | | | | 101 | | | | 101 | 1 |
| Turkey | | | 674 | | | | 516 | | | | | | 759 | 1949 | 3 |
| Uganda | | | | | | | 335 | | | | | | | 335 | 1 |
| Uruguay | 366 | | | | 333 | | | | | | 182 | | | 881 | 3 |
| Yemen | | | | | 238 | | 130 | | | | | | | 368 | 2 |
| Zambia | | | | | | | | | | | | | 366 | 366 | 1 |
| Total | 2418 | 1658 | 1049 | 4298 | 3344 | 3580 | 3932 | 606 | 1567 | 206 | 2153 | 307 | 4338 | 29,456 | 83 |

Table 2.
Summary statistics

This table reports the descriptive statistics for the variables employed in the study.

| | Mean | Std. Dev. | Obs. |
|--------------------------|---------|-----------|--------|
| <i>Firm variables</i> | | | |
| Leader region | 0.274 | 0.446 | 29,456 |
| Constrained | 0.478 | 0.5 | 29,456 |
| Apply | 0.569 | 0.495 | 29,456 |
| Approved | 0.867 | 0.34 | 16,774 |
| Age | 19.03 | 16.313 | 29,456 |
| Firm size | 107.437 | 355.889 | 29,456 |
| Sole proprietorship | 0.259 | 0.438 | 29,456 |
| Partnership | 0.057 | 0.232 | 29,456 |
| Foreign-owned | 0.064 | 0.244 | 29,456 |
| Exporter | 0.156 | 0.363 | 29,456 |
| State-owned | 0.007 | 0.083 | 29,456 |
| Audited | 0.448 | 0.497 | 29,456 |
| Subsidiary | 0.14 | 0.347 | 29,456 |
| Capital city | 0.152 | 0.359 | 29,456 |
| Experience | 18.746 | 11.22 | 29,456 |
| Corruption | 0.321 | 0.467 | 29,456 |
| Sales growth | 0.384 | 0.249 | 29,456 |
| Electricity | 1.56 | 0.811 | 29,456 |
| Informal credit | 0.706 | 0.235 | 29,456 |
| <i>Country variables</i> | | | |
| GDP growth | 3.544 | 3.67 | 83 |
| Inflation | 0.055 | 0.052 | 83 |
| Credit/GDP | 40.921 | 29.546 | 83 |
| Rule of law | -0.214 | 0.703 | 83 |

Table 3.
Main regressions

This table reports the results of probit regressions. The dependent variable is *Constrained*. Variables are defined in the Appendix. Estimated marginal effects are reported and standard errors are in parentheses. Standard errors are robust to heteroscedasticity. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | (1) | (2) | (3) | (4) |
|-----------------------|----------------------|----------------------|----------------------|----------------------|
| Leader region | -0.030*** (0.007) | -0.018*** (0.007) | -0.013* (0.007) | -0.014** (0.007) |
| log(Firm size) | | -0.177*** (0.007) | -0.176*** (0.007) | -0.174*** (0.007) |
| log(Age) | | -0.007* (0.004) | -0.008** (0.004) | -0.008** (0.004) |
| Sole proprietorship | | 0.047*** (0.008) | 0.048*** (0.008) | 0.051*** (0.007) |
| Partnership | | 0.017 (0.013) | 0.015 (0.013) | 0.021 (0.013) |
| Foreign-owned | | 0.041*** (0.011) | 0.041*** (0.011) | 0.040*** (0.011) |
| Exporter | | -0.050*** (0.008) | -0.048*** (0.008) | -0.046*** (0.008) |
| State-owned | | 0.026 (0.030) | 0.028 (0.030) | 0.029 (0.029) |
| Audited | | -0.093*** (0.006) | -0.090*** (0.006) | -0.088*** (0.006) |
| Subsidiary | | -0.034*** (0.008) | -0.033*** (0.008) | -0.038*** (0.008) |
| Capital city | | 0.026*** (0.008) | 0.029*** (0.008) | 0.032*** (0.008) |
| log(Experience) | | -0.006 (0.004) | -0.004 (0.004) | -0.004 (0.004) |
| Corruption | | 0.030*** (0.006) | 0.030*** (0.006) | 0.029*** (0.006) |
| Sales growth | | | 0.010 (0.014) | 0.021 (0.015) |
| Electricity | | | -0.011** (0.005) | -0.012** (0.006) |
| Informal credit | | | 0.376*** (0.029) | 0.280*** (0.032) |
| GDP Growth | | | -0.001 (0.002) | -0.038** (0.016) |
| Inflation | | | 0.461** (0.213) | 0.015 (1.844) |
| Credit/GDP | | | 0.000 (0.001) | -0.000 (0.001) |
| Rule of law | | | 0.112** (0.045) | -0.153 (0.115) |
| Observations | 29,456 | 29,454 | 29,454 | 29,454 |
| Pseudo R ² | 0.166 | 0.217 | 0.221 | 0.227 |
| Log likelihood | -16996.23 | -15965.56 | -15872.99 | -15763.55 |
| Year FE | yes | yes | yes | no |
| Industry FE | yes | yes | yes | yes |
| Country FE | yes | yes | yes | no |
| Country × year FE | no | no | no | yes |

Table 4.
Exploring the mechanisms

This table reports the results of probit regressions. The dependent variable is *Apply* in columns (1)-(2) and *Approved* in columns (3)-(4). All controls represent the full set of control variables used in Table 3. The variables are defined in the Appendix. Estimated marginal effects are reported and standard errors are in parentheses. Standard errors are robust to heteroscedasticity. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Apply | | Approved | |
|-----------------------|--------------------|---------------------|------------------|-------------------|
| | (1) | (2) | (3) | (4) |
| Leader region | 0.02*** (0.007) | 0.022*** (0.007) | 0.001 (0.006) | -0.003 (0.006) |
| All controls | yes | yes | yes | yes |
| Observations | 29,454 | 29,454 | 16,752 | 16,736 |
| Pseudo R ² | 0.225 | 0.229 | 0.154 | 0.158 |
| Log likelihood | -15605.36 | -15513.59 | -5563.47 | -5534.44 |
| Year FE | yes | no | yes | no |
| Industry FE | yes | yes | yes | yes |
| Country FE | yes | no | yes | no |
| Country × year FE | no | yes | no | yes |

Table 5.
Influence of firm characteristics

The table reports results of probit regressions. The dependent variable is *Constrained*. All controls represent the full set of control variables used in Table 3. All variables are defined in the Appendix. We include year, industry and country FEs in all estimations. Estimated marginal effects are reported and standard errors are in parentheses. Standard errors are robust to heteroscedasticity. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Firm size | | | Firm Age | |
|-----------------------------|-------------------|---------------------|---------------------|---------------------|-------------------|
| | Small | Medium | Large | Old | Young |
| | (1) | (2) | (3) | (4) | (5) |
| <i>Panel A: Constrained</i> | | | | | |
| Leader region | -0.001 (0.001) | -0.022* (0.012) | -0.034** (0.014) | -0.019** (0.009) | -0.08 (0.010) |
| All controls | yes | yes | yes | yes | yes |
| Observations | 12,664 | 10,183 | 6,524 | 13,977 | 14,233 |
| Pseudo R2 | 0.173 | 0.174 | 0.208 | 0.215 | 0.209 |
| Log likelihood | -6916.59 | -5699.67 | -3084.31 | -7408.11 | -7749.86 |
| <i>Panel B: Apply</i> | | | | | |
| Leader region | 0.007 (0.01) | 0.029*** (0.011) | 0.034** (0.013) | 0.026** (0.009) | 0.016 (0.01) |
| All controls | yes | yes | yes | yes | yes |
| Observations | 12,664 | 10,247 | 6,479 | 13,998 | 14,233 |
| Pseudo R2 | 0.16 | 0.196 | 0.253 | 0.23 | 0.208 |
| Log likelihood | -7268.09 | -5442.56 | -2710.18 | -7099.13 | -7809.73 |
| <i>Panel C: Approved</i> | | | | | |
| Leader region | 0.005 (0.013) | -0.006 (0.01) | 0.016 (0.011) | 0.004 (0.008) | -0.006 (0.011) |
| All controls | yes | yes | yes | yes | yes |
| Observations | 5,319 | 6,324 | 4,576 | 8,765 | 7,202 |
| Pseudo R ² | 0.169 | 0.125 | 0.136 | 0.158 | 0.147 |
| Log likelihood | -2208.09 | -2015.94 | -1206.60 | -2506.14 | -2768.40 |

Table 6.
Influence of leader characteristics

The table reports results of probit regressions. The dependent variable is *Constrained*. All controls represent the full set of firm-level and country-level control variables used in Table 3. Appendix provides the definition of the variables. We include year, industry and country FEs in all estimations. Estimated marginal effects are reported and standard errors are in parentheses. Standard errors are robust to heteroscedasticity. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Tenure | | Education in economics | |
|-----------------------------|------------------|----------------------|------------------------|--------------------|
| | Long tenure | Short tenure | Yes | No |
| | (1) | (2) | (3) | (4) |
| <i>Panel A: Constrained</i> | | | | |
| Leader region | 0.002 (0.011) | -0.025*** (0.008) | -0.028** (0.014) | -0.013* (0.008) |
| All controls | yes | yes | yes | yes |
| Observations | 14,422 | 14,597 | 7,037 | 22,417 |
| Pseudo R ² | 0.184 | 0.26 | 0.17 | 0.232 |
| Log likelihood | -8141.11 | -7381.97 | -3917.98 | -11927.51 |
| <i>Panel B: Apply</i> | | | | |
| Leader region | 0.001 (0.011) | 0.035*** (0.008) | 0.038*** (0.013) | 0.016** (0.008) |
| All controls | yes | yes | yes | yes |
| Observations | 14,422 | 14,597 | 7,037 | 22,417 |
| Pseudo R ² | 0.191 | 0.261 | 0.192 | 0.231 |
| Log likelihood | -8072.04 | -7179.72 | -3661.02 | -11874.71 |
| <i>Panel C: Approved</i> | | | | |
| Leader region | 0.005 (0.012) | -0.005 (0.008) | -0.01 (0.01) | 0.001 (0.008) |
| All controls | yes | yes | yes | yes |
| Observations | 7,520 | 8,982 | 4,472 | 12,196 |
| Pseudo R ² | 0.181 | 0.137 | 0.122 | 0.158 |
| Log likelihood | 2599.28 | -2862.15 | -1183.02 | -4343.07 |

Table 7.
Influence of country-level characteristics

The table reports the results of probit regressions. The dependent variable is *Constrained*. All controls represent the full set of firm-level and country-level control variables used in Table 3. All variables are defined in the Appendix. We include year, industry and country FEs in all estimations. Estimated marginal effects are reported and standard errors are in parentheses. Standard errors are robust to heteroscedasticity. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Individualism | Collectivism | Democracy | |
|-----------------------------|-------------------|--------------------|---------------------|------------------|
| | (1) | (2) | High (3) | Low (4) |
| <i>Panel A: Constrained</i> | | | | |
| Leader region | -0.005 (0.009) | -0.21** (0.011) | -0.019** (0.009) | -0.012 (0.01) |
| All controls | yes | yes | yes | yes |
| Observations | 17,743 | 10,604 | 14,154 | 15,300 |
| Pseudo R2 | 0.19 | 0.28 | 0.223 | 0.21 |
| Log likelihood | -9934.77 | -5149.57 | -7508.65 | -8341.96 |
| <i>Panel B: Apply</i> | | | | |
| Leader region | 0.014 (0.009) | 0.03*** (0.01) | 0.027** (0.009) | 0.018* (0.01) |
| All controls | yes | yes | yes | yes |
| Observations | 17,743 | 10,604 | 14,154 | 15,300 |
| Pseudo R2 | 0.204 | 0.272 | 0.244 | 0.193 |
| Log likelihood | -9766.71 | -5137.32 | -7032.73 | -8558.26 |
| <i>Panel C: Approved</i> | | | | |
| Leader region | -0.015 (0.01) | 0.005 (0.009) | 0.002 (0.008) | -0.007 (0.01) |
| All controls | yes | yes | yes | yes |
| Observations | 9,392 | 6,455 | 8,961 | 7,791 |
| Pseudo R2 | 0.155 | 0.158 | 0.099 | 0.206 |
| Log likelihood | -3429.68 | -1845.98 | -2813.70 | -2707.55 |

Table 8.
Robustness checks

This table reports the results of probit regressions. The dependent variable is *Constrained*. All controls represent the full set of control variables used in Table 3. All variables are defined in the Appendix. Estimated marginal effects are reported and standard errors are in parentheses. Standard errors are robust to heteroscedasticity. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

| | Constrained (alternative) | Excluding state- owned firms | Excluding Russia & China | Within-country evidence | Controlling for politically connected firms | Probit with sample selection | Placebo test | Weighted regressions |
|-----------------------|------------------------------|---------------------------------|-----------------------------|----------------------------|---|------------------------------------|------------------|-------------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Leader region | -0.025*** (0.007) | -0.013*** (0.007) | -0.17** (0.007) | -0.068* (0.027) | -0.014** (0.007) | -0.014** (0.007) | 0.007 (0.007) | -0.019** (0.007) |
| All controls | yes | yes | yes | yes | yes | yes | yes | yes |
| Observations | 29,161 | 29,248 | 29,454 | 2,204 | 26,821 | 26,753 | 29,454 | 29,454 |
| Pseudo R ² | 0.099 | 0.222 | 0.229 | 0.088 | 0.211 | - | 0.221 | 0.22 |
| Log likelihood | -17942.73 | -15758.18 | -13855.47 | -1086.55 | -14659.18 | -29192.86 | -15874.76 | -784.91 |
| Wald test | - | - | - | | | 49.48*** | | |
| Year FE | yes | yes | yes | yes | yes | yes | yes | yes |
| Industry FE | yes | yes | yes | yes | yes | yes | yes | yes |
| Region FE | no | no | no | yes | no | no | no | no |
| Country FE | yes | yes | yes | yes | yes | yes | yes | yes |

Appendix

| Variable | Definition and sources |
|----------------------------|--|
| <i>Dependent variables</i> | |
| Constrained | Dummy=1 if the firm needing bank credit applied for loan and was denied or refused to apply, and zero otherwise. Source: WBES. |
| Constrained (Alternative) | Dummy=1 if the firm reports access to credit as a moderate, major, or very severe obstacle, and zero otherwise. Source: WBES. |
| Apply | Dummy=1 if the firm needed loans and applied for credit, and zero otherwise. Source: WBES. |
| Approved | Dummy=1 if the firm applied for loan and received at least one line of credit, and zero otherwise. Source: WBES. |
| <i>Firm variables</i> | |
| Leader region | Dummy=1 if a firm is located in the region where the leader of the country was born, zero otherwise. |
| Firm size | Number of full-time permanent employees. Source: WBES. |
| Age | Age of the firm. Source: WBES. |
| Sole proprietorship | Dummy = 1 if a firm is a sole proprietorship, and zero otherwise. Source: WBES. |
| Partnership | Dummy= 1 if a firm is a partnership, and zero otherwise. Source: WBES. |
| Audited | Dummy=1 if the firm's financial statements were checked and certified by an external auditor, and zero otherwise. Source: WBES. |
| Experience | Top manager's number of years of experience in the sector. Source: WBES. |
| Foreign-owned | Dummy=1 if at least 50% of the firm's ownership is held by foreigners, and zero otherwise. Source: WBES. |
| Exporter | Dummy =1 if at least 10% of the firm's annual sales is derived from direct exports, and zero otherwise. Source: WBES. |
| State-owned | Dummy=1 if at least 50% of the firm's ownership is held by the government, and zero otherwise. Source: WBES. |
| Subsidiary | Dummy=1 if a firm is part of a large group, and zero otherwise. Source: WBES. |
| Capital city | Dummy=1 if firm is located in capital city, and zero otherwise. Source: WBES. |
| Corruption | Dummy=1 if a firm perceives corruption to be a very severe or major obstacle, and zero otherwise. Source: WBES. |
| Working capital | Proportion of goods and services paid for after delivery. Source: WBES. |
| Competition | Captures firm's perceived degree of competition in the informal sector. Source: WBES. |
| Political connections | Dummy=1 if a firm has secured (or attempted to secure) a government contract within the past 12 months, and zero otherwise. Source: WBES. |
| Sales growth | Average regional-level growth in firm's sales over three years. Source: WBES. |
| Electricity | Extent to which electricity is a constraint to the operations of firms in a region. Source: WBES. |
| Informal credit | Average number of firms in a region that finance part of their working capital or fixed assets with funds from money lenders, friends, or relatives. Source: WBES. |
| <i>Country variables</i> | |
| GDP growth | GDP growth rate. Source: WDI. |
| Credit/GDP | Domestic credit to the private sector as a share of GDP. Source: WDI. |
| Inflation | Inflation rate. Source: WDI. |

| | |
|------------------------|---|
| Rule of law | Measures the perceptions of the extent to which people have confidence in and abide by the rules of society. Source: World Governance Indicators. |
| Collectivism | Measure of collectivism culture. Source: Hofstede Insights. |
| Tenure | Number of years the leader has held office. Source: Dreher et al. (2020) |
| Education in economics | Dummy=1 if leader has higher education in economics or management, zero otherwise. Source: Baturo (2016). Completed with hand-collected online data on the personal biographies of leaders. |
| Democracy | Index to measure democracy. Source: Polity Project |
