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Implications for Bank Risk When Directors Are Related to Minority Shareholders

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Abstract

We examine whether directors on a board who are related to minority shareholders have an effect on bank risk. We use a panel of European banks with a controlling shareholder over the period from 2003–2017 and find that these directors result in lower risk. Our results depend crucially on whether or not such directors have reputational concerns or financial expertise, and the level of shareholder protection; the observed decrease in risk does not depend on their position on the board or on the presence of controlling shareholders. To identify the relationship, we use a dynamic generalized method of moments.

JEL Classification: G21, G28, G32

Keywords: Bank governance; bank risk; minority shareholder related directors; financial expertise

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1. Introduction

The Basel Committee has highlighted the failures of a variety of internal governance mechanisms as major contributing factors to the last global financial crisis (Kirkpatrick 2009; Basel Committee on Banking Supervision, 2010). As governments tightly regulate banks with restrictions on their entry and activities, the effectiveness of many traditional mechanisms intended to address corporate governance problems has become limited in this sector (Billett et al. 1998; Levine 2004). Furthermore, unlike in other sectors, external governance mechanisms such as takeovers hardly exist in banking (Levine 2004; De Haan and Vlahu 2016). Consequently, the board of directors as an internal governance mechanism in the banking sector plays a particularly important role in addressing agency problems and controlling risk.

The common internal corporate governance mechanisms in banks with a dispersed ownership structure that address the agency conflict between managers and shareholders and that are effective are not necessarily appropriate for addressing the corporate governance issues that arise in banks with a controlling shareholder. In these closely held banks, a further agency conflict arises between controlling and minority shareholders (Faccio and Lang 2002). Controlling shareholders might have the incentives and the ability to monitor banks' managers that leads to decisions that increase the overall firm value and thereby benefit all shareholders (Jensen and Meckling, 1976; Shleifer and Vishny, 1986). However, controlling shareholders can also take actions that are not in the interest of minority shareholders. First, controlling shareholders could engage in the expropriation of benefits to minority shareholders by pursuing their own through the diversion of assets and profits outside the firm (Johnson et al. 2000). Second, the risk appetite of controlling and minority shareholders could diverge. The theoretical literature shows that banks' shareholders have incentives to "excessively" favor risky investments in which they largely shift the potential losses to debtholders, the deposit insurer, or taxpayers (Galai and Masulis 1976; Jensen and Meckling 1976; Merton 1977; Saunders et al., 1990; Laeven and Levine, 2009; Haw et al., 2010). However,

shareholders with a substantial equity stake in the bank could also advocate for less risk than diversified shareholders who do not have a large fraction of their personal wealth invested in the bank (Zhang 1998; Paligorova 2010; Faccio et al. 2011). John et al. (2008) argue more generally that even if large shareholders have incentives to increase a firm's profits by taking on risky projects, they might pursue more conservative projects than minority shareholders would to extract private benefits from the firm. Higher ownership concentration could therefore be associated with a severe conflict of interest between controlling and minority shareholders.

Several theoretical papers show that the agency conflict between controlling and minority shareholders has deadweight costs that make outside funds more costly for the controlling shareholders. This increased cost demonstrates that it is optimal for controlling shareholders of firms with valuable growth opportunities to commit to limit such a conflict by improving the firm's governance (Johnson et al. 2000; Lombardo and Pagano 2002; Shleifer and Wolfenzon 2002; Doidge et al. 2004; Durnev and Kim 2005; Stulz 2005). A possible solution could be the nomination of board directors that are related to, and thus can be expected to represent the interests of, minority shareholders as a signal to the market that these shareholders are not at risk of such a conflict; for brevity, we shall refer to these as minority directors from here on. While these minority directors can incur private costs, the market may reward banks that add them to their boards that can lead to an increase in their market value. Bank risk might also increase if minority shareholders' risk appetite is greater than that of controlling shareholders and if minority directors have the incentive and ability to defend the interest of minority shareholders.

While certain jurisdictions in Europe with a prevalence of concentrated ownership structures have recommended the addition of minority directors in their Corporate Governance Codes², there are no relevant academic contributions underpinning such recommendations. A key question for

² Spain has introduced a proportional voting system in 2000 that allows for a minority of shareholders to appoint directors in proportion to their equity stake in both listed and non-listed corporations. In Italy, the Corporate Governance Codes have recommended since 2005 that listed companies should reserve at least one seat on the board of directors to persons that are not appointed by controlling shareholders. See Gutiérrez and Sáez (2013) for further details.

banking regulators is then to determine whether closely held banks that appoint directors related to minority shareholders are able to do so without increasing bank risk. To our knowledge, we are the first to investigate whether the presence of minority directors on the boards of banks has an effect on their risk-taking. If minority directors hold at least one seat on the board, they could exert influence as they have an opportunity to monitor and advise managers to ensure that the bank is run in the interest of minority shareholders that could lead to increased risk-taking. Such an increase in bank risk could reinforce the agency conflict between shareholders and debtholders as they cannot easily prevent banks from pursuing more risk (Dewatripont and Tirole, 1994). If our empirical analysis provides evidence that the presence of directors related to minority shareholders on the boards of banks increases financial instability, the Corporate Governance Codes should recommend not having such directors in the banking industry. This recommendation would be in line with that of the Basel Committee on Banking Supervision (2015) and OECD (2010): “the primary objective of bank corporate governance should be safeguarding stakeholders’ interest in conformity with public interest on a sustainable basis. Among stakeholders, shareholders’ interest would be secondary to debtholder’ interest.”

The addition of minority directors to bank boards does not necessarily guarantee that they will monitor banks and defend the interest of minority shareholders, as this depends on their incentives and ability to monitor managers. Therefore, we explore several possible ways in which the presence of minority directors could affect bank risk. The first hypothesis examines the role played by the incentives of minority directors to defend the interests of minority shareholders. The incentives of minority directors to monitor bank risk could depend on the reputation they want to build in the market for directorships (Fama and Jensen, 1983), as a strong reputation could help to obtain further board seats (Gilson, 1990; Kaplan and Reishus, 1990). While minority directors might prefer riskier strategies to satisfy minority shareholders, they could also have incentives to avoid excessively risky decisions, which might result in losses that the bank might not be able to absorb, to strengthen

their reputation for effective decision-making. Next, we explore if the ability of directors to monitor insiders depends on their ability to grasp the complexity of operations. Among minority directors, those with financial expertise could recognize risks with excessive downside and steer managers away from such risks (Güner et al. 2008; Minton et al. 2014). On the other hand, Mehran et al. (2011) argue that there is a “dark side” to expertise, as expert board members may be hired to increase risk-taking to boost the residual claims of shareholders. We furthermore investigate whether the presence of minority directors is in itself sufficient to influence risk-taking, or if they might also need to have more concrete, formal means to influence a board decision. For this, we explore what effect, if any, the position of minority directors on the board (e.g., being the chairman or on the audit committee) and the degree of shareholder protection might have on bank risk. We next examine whether the presence of controlling shareholders influences the way minority directors affect bank risk.

We also examine whether minority directors played a particular role during the global financial crisis. The presence of minority directors could lead to higher levels of risk-taking in normal times if their aim is to improve the profitability of the bank to satisfy shareholders who do not have to internalize the social costs of bank failures. Berltratti and Stulz (2012) support this argument by showing that banks with more shareholder-friendly boards took more risk before the financial crisis and consequently performed significantly worse during the crisis. We also examine whether the effect of minority directors on risk-taking is different for banks that benefited from a bailout during the global financial crisis.

Our analysis is based on a unique dataset of board ties between European listed banks and their shareholders. Our analysis focuses on European countries for two reasons. First, a majority of banks in that region have concentrated ownership even if they are listed in the stock market and are thus exposed to conflicts between controlling and minority shareholders (see Faccio and Lang 2002). Second, a large number of European banks have at least one minority director on their board. We,

therefore, conduct our empirical investigation on these issues on a panel of closely held European listed banks for the period spanning from 2003 to 2017. For this sample, we assemble detailed data on boards of directors and ownership structures by using the threshold of 5% to characterize minority shareholders. In our sample, roughly two-thirds of banks have at least one minority director on their board; these minority directors represent on average around 23% of the board members when present. Most of these minority directors are related to shareholders by being employed by one of them. Overall, our results demonstrate that the presence of minority directors on bank boards is associated with lower risk. Further investigations show that the presence of minority directors with reputational concerns or financial expertise in countries with lower levels of shareholder protection in fact drives this observed decrease in risk, while their position on the board has no significant impact on this relationship. Thus, minority directors also contribute to significantly reducing bank risk irrespective of the degree of ownership concentration or the degree of opacity displayed by banks. Our results further show that the presence of minority directors is associated with a decrease in risk in both normal and crisis times that is independent of the rescue packages provided during the last financial crisis. Interestingly, we also find that the presence of minority directors on bank boards has a positive and significant effect on market valuation and a neutral effect on profitability that might help explain why many closely held European banks have minority directors on their boards.

We carefully allow for the endogeneity issues pervading all empirical studies that relate to corporate governance aspects of firm risk (e.g., Hermalin and Weisbach 1998; Adams et al. 2010). We first apply propensity score matching as in Drucker and Puri (2005). We further address the potential endogeneity problem by using a dynamic generalized method of moments (GMM) in our approach to estimating our panel dataset.

Our contributions to the literature are then as follows: We contribute to the corporate governance literature for banks by being the first to investigate the role played by minority directors in

addressing the complex interplay of agency problems faced by the many stakeholders that are relevant to closely held banks. Our study also contributes to the literature that analyzes the relationship between risk-taking by banks and their ownership structures by allowing for how the agency conflict between controlling and minority shareholders could influence the risk decisions of banks. Our findings have relevant practical implications for regulators and proponents of corporate governance reform who evaluate the effectiveness of boards in controlling bank risk-taking, and with potentially important policy implications for the design of corporate boards more generally.

The remainder of the study is organized as follows: In Section 2, we describe our sample, define the ownership variables and the index that measures the presence and influence of minority directors, and provide some descriptive statistics. Section 3 presents the methodology used to conduct our empirical investigation and a discussion on our main results. In Section 4, we discuss further investigations. Section 5 contains robustness checks, and Section 6 concludes the study.

2. Sample and data description

2.1. Our sample

Our sample comprises bank holding companies, commercial banks, and investment banks from 16 Western European countries³ that are listed on the stock market and have at least one controlling shareholder; they hence show a significant amount of homogeneity in terms of overall characteristics. We collected the relevant information on board and ownership structures and financial statements at two-year intervals for the period from 2003 to 2017, as in Wintoki et al. (2012), to allow for a high degree of persistence in board structures (see, e.g., Zhou, 2001). The data on board structures and directors came from BoardEx, the data on bank ownership structure

³ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

came from Bankscope and Bloomberg, and the data on financial statements came from Bloomberg. For 2017, our sample represented 21 bank holding companies, 79 commercial banks, and 3 investment banks for a total of 103 banks; see Table A.1 in the Appendix (online) for a breakdown by country. On average, our sample covers almost 81% of the total assets of all listed banks covered by Bloomberg in 2017. We also drew on market data from Bloomberg for the construction of risk measures and macroeconomic data from the World Bank for use as control variables. Financial data were winsorized at the 1% and 99% levels (our results were generally similar using non-winsorized data). The variables used in the empirical analysis are defined in Table 1.

[Insert Table 1]

2.2. Identifying controlling and minority shareholders

Our first step was to identify banks with at least one controlling shareholder who had significant influence over the selection of the bank's board. We defined closely held banks as those where at least one shareholder held more than 5% of the shares.⁴ On average, the controlling shareholders then held 40% of the bank's shares in our sample. The threshold of 5% corresponds to the one we will also use to characterize minority shareholders in a second step. While many studies may commonly use a threshold of 10% for the characterization of controlling shareholders, we consider this threshold too high for proper identification of minority shareholders because it only allows limited direct influence over bank decision-making. However, we also tested the robustness of our results by using the 10% threshold.

The variable $Ownership_{i,j,t}$ measures the degree of ownership concentration by considering the voting rights of the largest shareholder. The most prominent types of controlling shareholder in our sample are banks, and financial and nonfinancial companies (see Table A.2 in the online appendix). Foundations and research institutes along with individuals and families present much smaller

⁴ For example, Kim et al. (2007) uses a similar threshold.

proportions of controlling shareholders, while public authorities only appear as controlling shareholders during and after the global financial crisis.

2.3. Index of relatedness of minority directors

We first identified minority directors and then constructed a board-level index characterizing the strength of the relatedness between directors and minority shareholders.

We used three criteria to match both the biographical information and the bank ownership structure to identify if a director had a relationship with a minority shareholder of the bank⁵: (1) they were an employee of the minority shareholder, (2) they were one of the minority shareholders, or (3) their family name was the same as one of the minority shareholders.⁶

We first computed individual scores based on two factors to measure the strength of the relatedness between a director and a minority shareholder by assigning a score of one (as compared to zero) for each criterion satisfied. The first factor considered if a director was related to a minority shareholder. The second factor considered whether their relationship with minority shareholders was in the present or the past. For example, if directors were current employees of a minority shareholder of the bank, they would have strong incentives to act in the interest of the persons who could fire them. However, if the relatedness was in the past, the related director would be less directly influenced by minority shareholders; thus, their effect should be less significant than in the first case. For each director, we summed up the scores associated with these two factors to obtain the “score of relatedness” of a director (see Table 2).

⁵ However, we were unable to ascertain who does in fact nominate particular directors.

⁶ In our sample, 43 directors had the same family name as one of the minority shareholders. Taking into account only directors with the same family name as minority shareholders when the name was not common in each country, we were left with 33 related directors according to this criterion. As a robustness test, we removed all these cases from the sample.

An overall score of relatedness was then computed at the bank level by taking the average score of all directors. We then used these scores to compute the index $Minority_{i,j,t}$: banks with a positive score of relatedness were ranked into deciles to obtain a corresponding index of relatedness that ranged from 1 to 10. The score of relatedness of zero indicated that the bank's board of directors was independent from minority shareholders, and we accordingly set the index of relatedness at zero.

2.4. *Some descriptive statistics*

We find that minority directors are present on the board of directors of around 66% of our sample of closely held banks (see Table 3). Minority directors, when present, account on average for around 23% of the board seats. The proportion of minority directors is therefore relatively high on average; especially in Spain (44%) where the Corporate Governance Codes cover the addition of such directors to the board, but also in other countries that do not have such provisions (Switzerland 35% and UK 35%) (see Table 4).

We also find that on average around 86% of minority directors are related through employment. Minority directors that are shareholders of the bank represent around 13% of the cases of related directors, while the criteria of the “same family name” account for around 1.5% of all cases (see Table A.3 in the online appendix).

Regarding the degree of ownership concentration of our sample of closely held banks, we find that on average the largest controlling shareholder holds around 41.5% of shares (see *Ownership* in Table 1). The statistics provided in Table A.4 in the online appendix show that the proportion of minority directors on the boards of banks is independent from the voting rights held by the largest controlling shareholder.

[Insert Tables 2 to 4]

3. Effect of minority directors on risk

3.1. Empirical specification

The basic econometric specification we use to examine whether the presence of minority directors within bank boards has an effect on bank risk is as follows:

$$Y_{i,j,t} = \alpha_0 + \alpha_1 Y_{i,j,t-1} + \beta \text{Minority}_{i,j,t} + \sum_p \delta_p \text{BoardControls}_{i,j,t} + \sum_m \theta_m \text{BankControls}_{i,j,t} + \sum_n \gamma_n \text{CountryControls}_{j,t} + \varepsilon_{i,j,t} \quad (1)$$

where subscript i denotes the bank, j the country, t the time period, and $\varepsilon_{i,j,t}$ denotes the idiosyncratic error term. We consider four alternative measures of bank risk as the dependent variable. Two measures are based on market data: the distance to default ($DD_{i,j,t}$) represents insolvency risk using the method developed by Merton (1977), and the stock return volatility ($Volatility_{i,j,t}$). The other two measures are based on accounting data: the ratio of nonperforming loans to total loans ($NPL_{i,j,t}$) to represent the quality of a bank's credit policy, and the ratio of risk-weighted assets to total assets ($RWA_{i,j,t}$) based on the Basel Accord risk-based capital guidelines that reflects the allocation of assets among the weighting categories.

$\text{Minority}_{i,j,t}$ is the index that represents the presence or influence of directors that are related to minority shareholders. We control for other board characteristics ($\text{BoardControls}_{i,j,t}$) commonly used in the literature: size ($\text{BoardSize}_{i,j,t}$), proportion of independent directors ($\text{Independent}_{i,j,t}$), tier structure ($\text{OneTierBoard}_{i,j,t}$), financial expertise of board members ($\text{FinancialExpert}_{i,j,t}$), and proportion of directors having reputational concerns ($\text{Reputation}_{i,j,t}$). We use the BoardEx classification to identify independent directors that relies on banks' own reporting. In line with Güner et al. (2008) and Minton et al. (2014), we consider directors as having financial expertise if

they have past or current employment experience in either accounting or non-accounting financial activities. We consider a director as having reputational concerns if they obtain new board positions in other firms during the years after we identified them as appointed to be a director of a given bank. We also control for the degree of ownership concentration by considering the voting rights of the largest shareholder ($Ownership_{i,j,t}$). As we only have banks with at least one controlling shareholder in our sample, this variable allows us to control for the strength of the agency conflict between the largest controlling shareholder and minority shareholders. We also control at the bank-level for size ($Size_{i,j,t}$), growth of assets ($AssetGrowth_{i,j,t}$), capital structure ($Capital_{i,j,t}$), loan ratio ($Loan_{i,j,t}$), deposit ratio ($Deposit_{i,j,t}$), and operating expenses ratio ($OperatingExp_{i,j,t}$). We furthermore include the following country-level variables ($CountryControls_{j,t}$): the growth rate of GDP ($GDP_{j,t}$) and an index that measures the level of minority shareholder protection for each country ($Legal_{j,t}$).

All control variables are defined in Table 1 that also has the corresponding descriptive statistics. We examined the correlation between our variables of interest (see Table A.5 in the online appendix) and detected some potential multicollinearity problems that we resolved by orthogonalizing the variables in question (see Table 1).

3.2. Endogeneity issues

One of the main concerns of studies on corporate governance is the potential problem of endogeneity with key firm variables; other studies, such as Hermalin and Weibach (1998, 2003), have raised this problem regarding the board of directors. These endogeneity issues may relate to reverse causation or the possibility that underlying unobservable factors affect both governance and firm variables, but it can also arise from the fact that the current values of governance variables could be functions of past firm variables (see Wintoki et al. 2012).

To address these potential endogeneity issues in our panel data setting, we first used propensity score matching to compare the level of risk for closely held banks with and without minority

directors on their boards. We then applied Blundell and Bond's (1998) system GMM estimator to estimate Equation (1), as in de Andres and Vallelado (2008), Wintoki et al. (2012), and Pathan and Faff (2013). This estimator is appropriate for dynamic panel specifications (Baltagi 2005) because it combines the original equation with a transformed one and is designed to address a potentially weak instrument. The GMM estimator can exploit the dynamic nature of internal governance mechanism to provide powerful "internal" instruments from within the panel, that is, past values of governance and other firm variables can serve as instruments for present realizations of governance that eliminates the need for external instruments that are typically far from straightforward to obtain and validate in this context.

We transformed the forward orthogonal deviations of the original equation as introduced by Arellano and Bover (1995). This approach is advantageous for unbalanced panels. We then applied the two-step estimator that included the Windmeijer (2005) finite-sample correction to allow for the potential downward bias arising in small samples. To avoid excessive loss of degrees of freedom, we limited the number of instruments to four by restricting the lag range to further collapse the instrument matrix as suggested by Roodman (2009). We applied the GMM instruments to the lagged dependent variable, the board, and bank-level variables, while considering the country-level variables as strictly exogenous. The validity of our estimates was verified in the standard way using the AR(2) test and the Hansen test. The AR(2) test corresponds to the Arellano-Bond test that tests for the absence of second-order serial correlation in the first-differenced residuals, while the Hansen test checks for the validity of the entire set of instruments as a group in the sense of exogeneity.

3.3. Results

Propensity score matching accounts for the possibility that we did not randomly allocate the minority directors across banks (Drucker and Puri, 2005). For this, we computed each observation's propensity score to measure the probability that a bank has a minority director on its board given

the board-, bank-, and country-level control variables in Equation (1). Then, each bank with at least one minority director on its board (treated group) was matched with a bank that did not have one but had the closest propensity score to the treated firm (control group). We performed the nearest-neighbor matching by pairing each treated bank with the three closest banks in the control group.⁷ Table 5 presents the results. The propensity score matching shows that the level of risk is lower (higher distance to default and lower volatility) in the group of banks with minority directors on their boards. We also observe that there is no significant difference in the level of nonperforming loans and the ratio of risk-weighted assets to total assets between the treated and the control groups. Our propensity score matching analysis results are very similar to those found using the GMM approach presented in the next paragraph.

The more extensive estimation results for Equation (1) from using the two-step dynamic panel system GMM estimator are presented in Table 6. The model diagnostics reported at the bottom of the table indicate that our estimates are valid, as both the AR(2) test for the absence of second-order serial correlation in the first-differenced residuals and the Hansen J-statistics of over-identifying restrictions that test the null of instrument validity in the two-step system GMM estimation produce statistically insignificant test statistics. We note that the lagged dependent variable is significant throughout that validates our choice of a dynamic specification for Equation (1).

The results in Table 6 show that the presence and influence of minority directors within the board (*Minority*) significantly increases the distance to default and decreases the stock return volatility. However, having minority directors on the board does not have a significant effect on credit risk as measured by nonperforming loans or by the ratio of risk-weighted assets. This lack of effect indicates that the presence of minority directors on the board can help shape the overall market risk profile of the bank as reflected in the distance to default and the volatility of stock returns. But more narrowly oriented risk aspects of the balance sheet, such as nonperforming loans ratios or the ratio

⁷ We alternatively used the radius method and the kernel or caliper approach to obtain similar results.

of risk-weighted assets that are affected by a more complex range of bank-internal operational decisions, are not directly affected by the presence of such minority directors.

All our main results are qualitatively consistent with those obtained when alternatively applying a fixed-effects estimator with standard errors clustered at the country level (see Table A.6 in the online appendix). Regarding the control variables, our results also show that the proportion of independent directors (*Independent*) is not associated with a significant effect on bank risk, which is in line with Minton et al. (2014) and Battaglia and Gallo (2017). The control variables for the structure and characteristics of the board indicate that neither size (*BoardSize*), the proportion of directors with financial expertise (*FinancialExpert*), nor the reputational concerns of directors (*Reputation*) have an effect on bank risk. We also find that the voting rights of the largest shareholder (*Ownership*) do not have a significant effect on bank risk. This result indicates that the degree of ownership concentration is not a significant determinant of risk when we consider only closely held banks.

Overall, our results provide evidence that the addition of directors that are related to minority shareholders does not increase bank risk but may actually reduce it. Our results thus indicate that the decision to add minority directors to their boards by closely held banks is not sufficient to address the agency problems that arise between minority and controlling shareholders in terms of risk-taking. However, these general results may conceal disparities in the effect of minority directors on risk depending on their incentives and ability to monitor banks and to defend the interest of minority shareholders.

[Insert Tables 5 and 6]

4. Extensions to analysis

We now investigate several channels that could explain our results. We also explore whether the addition of minority directors to closely held banks played a particular role during the financial crisis of 2007-2008 and had an impact on their market valuation and profitability.

4.1. Channels for the risk-reducing effect of minority directors

Despite what one might expect, we did not find that the addition of minority directors to bank boards was associated with an increase in risk. We now investigate two channels that might explain that result: the reputational concerns of minority directors in the market for directorships, and their financial expertise that can help them identify and avoid risks with an excessive downside.

Reputation in the market for directorships

An important factor that may influence the incentives of minority directors to monitor banks is their reputation in the market for directorships. Fama and Jensen (1983) argue that directors have incentives to monitor managers if they want to strengthen their reputation for effective decision-making with the objective to obtain more board seats (Gilson, 1990; Kaplan and Reishus, 1990). If this is the case, then they might have incentives to avoid excessive risk that can lead to financial trouble. Therefore, even if a director represents a minority shareholder, they might prefer to avoid risks that could endanger the bank in order to enhance their reputation in the market for directorships.

We identify for each minority director if they obtain new board positions in other firms during the years after the one in which we identified them as representing a minority shareholder. We then compute the dummy variable *dReputation* that equals one if at least one of the minority directors has at least one new position at another firm. The statistics in Table 1 show that on average around 60% of banks have at least one minority director that is associated with a new board position.

To examine if their reputational concerns affect the way minority directors influence bank risk, we augment Equation (1) with an interaction term between the index measuring the presence and influence of minority directors ($Minority_{i,j,t}$) and the dummy variable $dReputation$ as follows:

$$\begin{aligned}
Y_{i,j,t} = & \alpha_0 + \alpha_1 Y_{i,j,t-1} + \beta_1 Minority_{i,j,t} + \beta_2 Minority_{i,j,t} \times dReputation_{i,j,t} \\
& + \beta_3 dReputation_{i,j,t} + \sum_p \delta_p BoardControls_{i,j,t} \\
& + \sum_m \theta_m BankControls_{i,j,t} + \sum_n \gamma_n CountryControls_{j,t} + \varepsilon_{i,j,t} \quad (2)
\end{aligned}$$

Our results are displayed in Panel A of Table 7. The Wald tests show that the reduction in risk we found previously when minority directors were present on the boards of banks holds only when at least one of them obtains a new board position at another firm. This result is consistent with the argument that minority directors who aim to maintain their reputation in the market for directorships might prefer to avoid excessively risky decisions that could cause financial hardship. Our results further show that the presence of minority directors without such a concern has a neutral effect on all bank risk measures we consider. This last result is consistent with our previous results for Equation (1) (see Table 6) where the control variable *Reputation* on its own is not significant.

Financial expertise

We next examine whether the significant effect of the presence of minority directors on bank risk depends on a minimum number of minority directors with financial expertise. The role of financial experts in managing risk could be ambiguous. Minority directors with financial expertise might be well placed within the board to evaluate the complexity of projects and their associated risks and might further be able to identify risks that could endanger the solvency of the bank. On the other hand, such financial experts might also be able to better identify risky investment

opportunities that could be beneficial to shareholders that might lead to increased risk-taking with the aim of increasing the residual claims of shareholders.

Table 2 showed that on average there are around four minority directors per board in our sample. For a given year, we classify a bank as having a board with a high proportion of minority directors with financial expertise if at least three of them are financial experts; this is roughly equivalent to at least 75% of minority directors on a board having financial expertise.

To examine this potential channel of effect, we augment Equation (1) with an interaction term between the index that measures the presence or influence of minority directors ($Minority_{i,j,t}$) and the dummy variable ($dHighFinExp_{i,j,t}$) that equals one if at least 75% of minority directors have financial expertise. Our results are shown in Panel B of Table 7. We first observe that the presence of minority directors without financial expertise has a neutral effect on bank risk. The Wald tests further indicate that the risk-reducing effect of minority directors is significantly driven by those with financial expertise. This is consistent with the argument that minority directors with financial expertise can identify risks with an excessive downside. This is particularly relevant in light of our previous results for Equation (1) (see Table 6) where the control variable $FinancialExpert_{i,j,t}$ on its own was not significant. We further verify that financial expertise does not drive the risk-reducing effect by regressing our bank risk measures on the variable $FinancialExpert_{i,j,t}$ and the interaction term between $FinancialExpert_{i,j,t}$ and the dummy variable $dMinority_{i,j,t}$ that equals one if there is at least one minority director on the board. The results are displayed in Table A.7 in the online appendix. These results confirm that it is not financial expertise that explains the risk-reducing effect, but minority directors with financial expertise.

To summarize, we find that the addition of minority directors to the boards of banks has either a neutral or a reducing effect on their risk-taking that is conditional on the financial expertise or the concern for reputation in the market for directorships of those directors. Therefore, our results overall indicate that the addition of minority directors is not an effective governance mechanism to

reduce the agency conflict between minority and controlling shareholders in terms of risk-taking. However, and perhaps more importantly, the presence of such minority directors has a non-detrimental effect on the interests of debtholders and regulators, and thus financial stability more generally.

[Insert Table 7]

4.2. *Strength of influence*

We next explore the potential roles played by an influential board position and the overall level of shareholder protection in the reduction of risk. We further analyse if the relationship between the presence of minority directors and bank risk is influenced by the degree of ownership concentration.

We first examine whether this relationship holds irrespective of minority directors' position as chairman or as a member of the audit committee of the board. As chairman of the board, a director can cast the vote to make a decision; while as a member of the audit committee, a director has the power to actively monitor. The proportions of minority directors with financial expertise who are chairman or on the audit committee are around 11% and 17%, respectively. The proportions of minority directors with concerns about their reputation who are chairman or on the audit committee are around 14.5% and 15%, respectively. We compute the dummy variables $dReputationChairman_{i,j,t}$ and $dFinExpChairman_{i,j,t}$ and $dReputationAudit_{i,j,t}$ and $dFinExpAudit_{i,j,t}$ that characterize whether or not at least one minority director with reputational concerns or with financial expertise is the chairman or is on the audit committee, respectively. We first augment Equation (1) with the interaction terms between the index $Minority_{ij}$ and alternatively the dummy variable $dReputationChairman_{i,j,t}$ or $dFinExpChairman_{i,j,t}$ and then repeat this exercise for the variable $dReputationAudit_{i,j,t}$ or $dFinExpAudit_{i,j,t}$. The results are displayed in Tables 8 and 9 (Panel A for reputational concerns and Panel B for financial expertise). We observe that our previous

results that were linked to lower risk hold independently of their position as chairman or as a member of the audit committee.

Next, we examine whether the level of shareholder protection affects the impact of minority directors with reputational concerns or financial expertise on risk. Thus, we augment Equation (2) with triple interaction terms between the index $Minority_{i,j,t}$, a dummy variable that equals one if the bank is in a country with relatively high levels of shareholder protection ($dHighLegal_{j,t}$), and a dummy variable for the reputational concerns ($dReputation_{i,j,t}$) or financial expertise ($dHighFinExp_{i,j,t}$) of minority directors. To measure the level of shareholder protection, we follow Rossi and Volpi (2004) and Dahya et al. (2008) and construct an index that combines two established indices: one measuring the level of shareholder rights (revised anti-director rights index of Djankov et al. (2007)) and one measuring the quality of law enforcement (the rule of law index from the Worldwide Governance Indicators (World Bank)). The anti-director rights index measures how strongly the legal system favors minority shareholders vis-a-vis controlling shareholders in corporate decision-making that includes voting. The rule of law index reflects the perceptions of the extent to which agents have confidence in and abide by the rules of society and in particular the quality of contract enforcement, property rights, the police, and the courts. The index $Legal_{j,t}$ is defined as the revised anti-director rights index multiplied by the rule of law index for which a higher index indicates a higher level of shareholder protection. The dummy variable $dHighLegal_{j,t}$ equals one if the value of $Legal_{j,t}$ is higher than the sample median. The estimation results for the augmented Equation (2) are given in Table 10 along with the associated Wald tests. The results show that the presence of minority directors with either reputation concerns or financial expertise is linked to lower risk in countries with lower levels of shareholder protection.

Next, we examine whether the degree of ownership concentration affects the relationship between the presence of minority directors and bank risk. Controlling shareholders who have incentives to pursue more conservative projects than minority shareholders could drive the risk-

reducing effect associated with minority directors. We augment Equation (1) with an interaction term between the index that measures the presence or influence of minority directors ($Minority_{i,j,t}$) and the dummy variable $dHighOwnership_{i,j,t}$ that equals one if the controlling shareholders hold at least 50% of the shares. The results are displayed in Table 11. We observe that the risk-reducing effect of minority directors holds independently of the degree of ownership concentration.

Our results overall show that the presence of minority directors can lead to lower risk if they have reputational concerns or financial expertise irrespective of their position on the board but only in countries that have lower levels of shareholder protection. Moreover, the presence of controlling shareholders does not influence the risk-reducing effect of minority directors.

[Insert Tables 8 to 11]

4.3. Global financial crisis

We further examine if the presence of minority directors may have played a specific role during the global financial crisis. We first explore whether the risk-reducing effect of minority directors overall applies equally to both non-crisis and crisis periods. We compute the dummy variable $dCrisis_t$ that equals one for during the crisis years (2008-2011) that have both the subprime and the sovereign debt crisis periods. We next examine whether the effect of minority directors on risk-taking is different depending on whether banks benefited from a rescue package during the global financial crisis. We follow Molyneux et al. (2014) and Fratianni and Marchionne (2013) to classify a bank as “rescued” if it benefited from at least one of the rescue measures from the government (State guarantees, recapitalization, nationalization, or access to emergency loans). We create the dummy variable $dRescued_{i,j,t}$ that equals one for “rescued” banks during the crisis period and zero otherwise. We have 47 banks (out of 103 banks) that are classified as “rescued” in our sample (see Table 1).

For these two investigations, we augment Equation (1) with an interaction term between the index $Minority_{i,j,t}$ and alternatively the dummy variables $dCrisis_t$ and $dRescued_{i,j,t}$. The results are reported in Table 12 (Panels A and B). We observe that the presence or influence of minority directors is associated with an increase in the distance to default and a reduction in volatility for both normal and crisis years and independently of any government support provided during the crisis. We also find that the presence of minority directors on bank boards has no significant effect on the level of nonperforming loans and risk-weighted assets throughout.

[Insert Table 12]

4.4. Degree of opacity

We next investigate if the relationship between the influence of minority directors and bank risk could be explained by the degree of bank opacity. The opaque nature of banking exacerbates the information asymmetry problem and diminishes stakeholders' capacity to monitor banks' decisions (Levine, 2004; Morgan, 2002). Some studies provide evidence that banks with a lower degree of transparency are associated with higher risk (e.g., Kim et al, 2020). The influence of minority directors on boards may thus be particularly beneficial in a context of high degrees of opacity, as they have greater specific information about the complexity of banks' activities.

We follow Kim et al (2020) and add earnings management to three other components (earnings prediction errors, market funding, and lending activity as in Lepetit et al. (2017)) to compute an index of opacity ($Opacity_{i,j,t}$). The variable $DHighOpacity_{i,j,t}$ equals one if the bank's index of opacity is higher than the median sample. We augment Equation (1) with an interaction term between the index $Minority_{i,j,t}$ and the dummy variable $DHighOpacity_{i,j,t}$. The results in Table 13 provide evidence that the presence and influence of minority directors contributes to significantly reducing bank risk irrespective of the degree of opacity displayed by banks.

[Insert Table 13]

4.5. Market valuation and profitability

We further examine whether the presence of minority directors on the board of closely held banks has an effect on their market valuation and profitability.

We expect the addition of minority directors on the boards of banks to increase their market value if market participants expect that the presence of those directors will reduce the capacity of controlling shareholders to take actions that are not in their interest. Further, we expect their addition to increase the market value if minority shareholders anticipate that they will reduce the extraction of private benefits.

To examine this issue, we consider Tobin's Q as a measure of market valuation ($Tobin_Q_{i,j,t}$) that is computed as the book value of assets minus the book value of equity plus the market value of equity that is divided by the book value of assets. We alternatively consider the annual market return of a bank shareholder (shareholder market return, SMR). We calculate the SMR ($SMR_{i,j,t}$) by using monthly data as the shareholder market return adjusted for dividend payments. We then calculate the average value of these monthly SMRs over each year. The estimation results using the two-step dynamic panel system GMM estimator are reported in columns (1) and (2) of Table 14. Our results show that the presence and influence of minority directors on the board has a significant and positive effect on Tobin's Q and SMR. This result indicates that for closely held banks, appointing directors that are related to minority shareholders does increase market value. These findings support the argument that having minority directors on the board can be an effective means to convince outside investors that the controlling shareholders may refrain from diverting resources.

We next analyze whether the presence of minority directors has an effect on bank profitability. We could expect controlling shareholders to appoint directors that are affiliated with minority shareholders to boards if the benefits of their presence are likely to exceed the associated costs and

in particular, if this appointment does not lead to a decrease in profitability. We use the return on assets (*ROA*) to measure bank profitability. The results in Table 14 (columns (3)) show that the risk-reducing effect is not accompanied by a decrease in profitability, as reflected by the non-significant effect of the presence of minority directors on *ROA*.

[Insert Table 14]

5. Robustness checks

We subject our results to an extensive range of robustness checks that are related to sample issues, the criteria used to identify controlling shareholders and related directors, and the effect of the political connections on minority directors.

Criteria to identify controlling shareholders and related directors

We alternatively use the control threshold of 10% to identify controlling and minority shareholders that changes our sample as we end up with 88 controlled banks for the year 2017, of which only 71 have minority directors; however, our conclusions remain unchanged (see Panel A in Table A.8 in the online appendix).

We further compute two alternative indices for the relatedness of minority directors. First, we use “having the same family name as a minority shareholder” as one of the criteria to identify minority directors. In our main results, we only considered related directors having the same family name as minority shareholders when it is not a common family name in each country (33 directors in our sample). We also compute another index where we do not consider these directors at all as their relatedness may be exposed to a potentially more substantial risk of misclassification. Second, we relax the criterion of a director being a minority shareholder to check if our index $Minority_{i,j,t}$ represents director ownership. In 2017, there are only 20 banks in our sample (out of a total of 103) where minority directors are also shareholders of the bank. These minority directors/shareholders

represent on average around 13% of the minority directors (see Table A.3 in the online appendix). We rerun our regressions with these two alternative indices and find that our main conclusions are unchanged (see Panels B and C in Table A.8 in the online appendix). We further check whether the risk-reducing effect of minority directors is driven by those minority directors with equity holdings, as in this case their interests could be strongly aligned with those of minority shareholders (Bennett et al., 2015). We augment Equation (1) with an interaction term between the index $Minority_{i,j,t}$ and the dummy variable $DEquityHoldings_{i,j,t}$ that equals one if a bank has at least one minority director who is also one of the shareholders of the bank. The results in Panel D of Table A.8. show that the presence or influence of minority directors contributes to significantly reducing bank risk irrespective of their potential levels of equity holdings.

Third, we reestimate our regressions with an alternative measure of the relatedness of board directors to minority shareholders that is defined as the percentage of minority directors on the board; the results are again unchanged (see Panel E in Table A.8 in the online appendix).

Subsample analysis

We rerun our regressions on different subsamples to test the robustness of our analysis. We first exclude Spain and Italy from the initial sample to ensure that our results are not driven by their inclusion, as these are the only two countries to prescribe the presence of minority directors. The results show that our main conclusions are unchanged. Next, we exclude Switzerland from the initial sample as we have a relatively high number of banks from this country in our sample. Even excluding these banks, our conclusions from previous sections prevail (see Panels A and B in Table A.9 in the online appendix).

Political connection

We next verify whether the risk-reducing effect of minority directors is driven by their political

connectedness. Firms might not be able to count on having a substantial advantage or preferential treatment due to their political connections if they are located in countries with a well-functioning legal system (Goldman et al., 2009). Indeed, government officials in such countries would find it both legally and politically costly to help firms for private rather than public benefit. However, the political connections of directors can be beneficial for a firm for several reasons, such as providing knowledge regarding how to engage with government bureaucracies or the allocation of lucrative government contracts (Goldman et al. 2013). In line with this argument, Goldman et al. (2009) and Niessen and Ruenzi (2010) find positive abnormal returns following the announcement of the nomination of a politically connected director, and Houston et al. (2014) find that the cost of bank loans is lower for firms with board members who have political connections.

We classify a director as politically connected if they hold a political or regulatory position or has held them in the past, which is in line with Faccio (2006) and Goldman et al. (2013). We augment Equation (1) with an interaction term between ($Minority_{i,j,t}$) and a dummy variable that equals one if at least one minority director is politically connected. The results in Table A.10 in the online appendix show that the observed decrease in risk holds independently of the political connectedness of minority directors. It is also important to note that only a small number of directors have both financial expertise and are politically connected that shows our previous results are robust.

6. Conclusion

We use a panel of European banks with a controlling shareholder over the period from 2003 to 2017 to examine whether closely held banks add minority directors to their boards to reduce the agency conflict between minority and controlling shareholders. Further, we examine whether this decision might lead to an increase in bank risk-taking by intensifying the additional agency conflict that arises between shareholders and debtholders and regulators.

We find that the presence and influence of minority directors on bank boards is generally associated with lower risk. We investigated several channels that could explain why the presence of minority directors reduces bank risk. We first examined the incentives of minority directors to defend the interest of minority shareholders by considering their reputational concerns in the market for directorships. Our results provided evidence that minority directors were reluctant to support riskier decisions to maintain their reputation in the market for directorships and to obtain other board positions. We next investigated the role of minority directors with the ability to identify risks that could endanger the solvency of banks and found that risk reduction was only achieved when minority directors had financial expertise. Further investigations showed that their risk-reducing effect held irrespective of their position as chairman or being on the audit committee, but this effect was only observed in countries with lower levels of shareholder protection. Our study also provided evidence that the presence of minority directors contributes to significantly reducing bank risk irrespective of the degree of opacity or the degree of ownership concentration of banks. We further found that the presence of minority directors was associated with lower risk both in normal and crisis times, and this association was independent of the bailout policy applied during the last crisis. Our results also demonstrated that the presence of minority directors had a positive and significant effect on market valuation, while we found a neutral effect on profitability; these results might help explain why a large number of closely held European banks have added minority directors to their boards.

Overall, as our empirical analysis provides evidence that the addition of minority directors to the boards of closely held banks does not lead to an increase in risk. Therefore, we can conclude that it is not a sufficient governance mechanism to mitigate the agency conflict between controlling and minority shareholders. However, we observe that market participants positively value the addition of minority directors that indicates it is a way for closely held banks to credibly commit that they will not expropriate funds from minority shareholders.

Our findings contribute to the current policy debate on what forms of corporate governance in banks could lead to the most efficient outcome for all stakeholders. The addition of minority directors appears not to be detrimental to financial stability, particularly if they have financial expertise or reputational concerns. As a matter of fact, a sufficient presence of such directors could help to ensure that the risk-taking incentives of insiders are better aligned with the interests of other stakeholders such as depositors, debtholders, and banking supervisors. It could also allow controlling shareholders to credibly commit that they will not divert corporate resources that then leads to a higher market valuation. As a consequence, it seems advisable that the Corporate Governance Codes allow minority directors to be present on bank boards. Of course, to a controlling shareholder, the cost of adding minority directors is the potential reduction in perquisites linked to being in a controlling position that might thus plausibly result in resistance to the introduction of any such changes.

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Table 1 Definitions, data sources, and summary statistics for variables. This table defines the variables and reports summary statistics for the full sample on average over the period from 2003-2017.

Variables	Definition	Data sources	Mean	Median	Standard Deviation	Min.	Max.
<i>Dependent variables, measures of risk</i>							
DD	Distance to default computed using the Merton (1977) model	Bloomberg	3.96	3.71	2.20	-1.62	15.11
Volatility	Standard deviation of monthly stock returns over the previous twelve months	Bloomberg	0.34	0.28	0.22	0.09	1.22
NPL	Ratio of nonperforming loans over total loans (%)	Bloomberg	5.09	2.93	6.95	0.0005	37
RWA	Ratio of risk-weighted assets over total assets (%)	Bloomberg	48.17	47.59	23.41	0.06	82.25
<i>Dependent variables, measures of performance</i>							
Tobin_Q	Book value of assets minus the book value of equity plus the market value of equity that is divided by the book value of assets	Bloomberg	1.01	0.99	0.73	0.77	1.75
SMR	Shareholder market return computed as the annualized average monthly returns from share prices of each bank	Bloomberg	0.13	0.09	0.42	-0.99	2.22
ROA	Return on assets computed as net income divided by total assets (%)	Bloomberg	0.45	0.45	1.14	-3.11	3.18
<i>Index of the presence and influence of minority directors</i>							
Minority	Index of the relatedness of board directors to minority shareholders having less than 5% of control rights. Minority directors are related to minority shareholders if: (1) they are an employee of one of the minority shareholders; (2) they are one of the minority shareholders of the bank; or (3) they have the same family name as one of the minority shareholders of the bank. We first compute individual scores based on two factors to measure the strength of the relatedness between a director and a minority shareholder by assigning a score of one (as compared to zero) for each criterion satisfied. The first factor considers if a director is related to a minority shareholder. The second factor considered is whether their relationship with minority shareholders is in the present or the past. For each director, we sum up the score associated with these two factors to obtain the “score of relatedness” of a director (see Table 2).	BoardEx, Bloomberg, Bankscope	4.22	4.0	3.51	0	10
<i>Board-level control variables</i>							
Independent	Proportion of independent directors on the board (%)	BoardEx	30.79	33.72	12.87	0	100
BoardSize	Natural logarithm of the number of directors on the board	BoardEx	2.62	2.64	0.42	1.79	3.52
OneTierBoard	Dummy variable that equals one if the bank has a one-tier board	Bloomberg	0.57	1	0.49	0	1

FinancialExpert	Proportion of financial experts on the board (%)	BoardEx	94.37	100	10.32	25	100
Reputation	Proportion of directors that obtains new board positions in other firms during the following years after we identified them on the board of a given bank (reputation concern) (%)	BoardEx	49.70	50.00	22.54	0	100
<i>Bank-level control variables</i>							
Ownership	Voting rights of the largest shareholder (%)	Bankscope	41.49	36.31	31.22	5.38	98
Size	Natural logarithm of total assets (orthogonalized on capital)	Bloomberg	11.37	11.31	1.97	5.36	14.74
AssetGrowth	Annual growth rate of total assets (%)	Bloomberg	8.66	4.25	20.28	-30.78	43.54
Loan	Gross loans divided by total assets (%)	Bloomberg	55.67	60.92	21.31	5.58	91.23
Capital	Total equity divided by total assets (%)	Bloomberg	6.85	6.25	3.42	1.26	36.06
Deposit	Deposits divided by total assets (%)	Bloomberg	47.65	48.14	18.65	3.85	93.17
OperatingExp	Total operating expenses divided by total operating income (%)	Bloomberg	3.52	2.37	7.49	-3.64	15.06
<i>Country-level control variables</i>							
GDP	GDP growth rate (%)	World Bank	0.88	1.42	2.71	-9.13	7.80
Legal	Product of Revised Anti-Director Index (RADI) and index of Rule of Law (RoL). RADI: Index measuring shareholder protection with a range from 0 to 5. RoL: Index measuring the quality of law enforcement, with range -2.5 to 2.5	Djankov et al. (2008) Worldwide Governance Indicators (World Bank)	4.98	5.25	2.33	0.17	9.07
<i>Further variables</i>							
dReputation	Dummy variable that equals one if at least one of the minority directors obtains a new board position at another firm during the following years after we identified them as representing a minority shareholder	BoardEx	0.60	1	0.48	0	1
dHighFinExp	Dummy variable that equals one if at least three of the minority directors are financial experts	BoardEx	0.98	1	0.12	0	1
dMinority	Dummy variable that equals one if there is at least one minority director on the board	BoardEx	0.74	1	0.43	0	1
dReputationChairman	Dummy variable that equals one if at least one of the minority directors has a reputational concern and is the chairman		0.12	0	0.33	0	1

dFinExpChairman	Dummy variable that equals one if at least one of the minority directors is a financial expert and is the chairman	BoardEx	0.40	0	0.49	0	1
dReputationAudit	Dummy variable that equals one if at least one of the minority directors has a reputational concern and is on the audit committee		0.35	0	0.47	0	1
dFinExpAudit	Dummy variable that equals one if at least one of the minority directors is a financial expert and is on the audit committee	BoardEx	0.21	0	0.41	0	1
dHighLegal	Dummy variable that equals one if the value of LEGAL for a country is higher than the sample median	Djankov et al. (2008), World Bank	0.47	0	0.50	0	1
dHighOwnership	Dummy variable that equals one if the controlling shareholders hold at least 50% of the shares	Bankscope	0.51	1	0.50	0	1
dCrisis	Dummy variable that equals one for the period from 2007-2011		0.12	0	0.33	0	1
dRescued	Dummy variable that equals one for banks that benefited from at least one rescue measure during the crisis period	Molyneux et al. (2014), Fratianni and Marchionne (2013)	0.07	0	0.26	0	1
Opacity	Index of opacity following Lepetit et al. (2017); the index is based on four opacity components (earnings prediction errors, earnings management, market funding, and lending activity) and ranges from 1 to 10 in which higher values of the index mean higher levels of opacity	Bloomberg	4.99	5	2.54	1	10
dHighOpacity	Dummy variable that equals one if the index of opacity of a bank is higher than the median sample	Bloomberg	0.58	1	0.49	0	1
DEquityHoldings	Dummy variable that equals one if a bank has at least one minority director who is also one of the shareholders of the bank	Boardex Bloomberg	0.12	0	0.31	0	1

Table 2 Score of relatedness of a minority director. This table shows the total score of relatedness of a director. We give a score of one (as compared to zero) for each of the following factors: (1) if a director is related to minority shareholders and (2) if the relationship is in the present.

	Not related Score = 0	Related Score = 1	
		Present Score = 1	Past Score = 0
Total of the scores of relatedness	0	2	1

Table 3 Descriptive statistics per year for minority directors. This table displays the proportion of banks having at least one minority director on average for the full sample, the average number of directors, the average number of minority directors on boards, and the proportion of minority directors on boards for banks with at least one minority director

	2003	2005	2007	2009	2011	2013	2015	2017	Average
Banks with minority directors (%)	54.76	60	53.62	73.61	72.97	67.44	65.35	79.61	65.92
Average number of directors	16.04	16.56	16.48	15.54	14.81	13.94	13.06	12.86	14.91
<i>For banks with at least one minority director</i>									
Average number of minority directors	3.43	4.10	3.49	3.79	4.03	3.76	4.70	4	3.91
Average proportion of minority directors (%)	18.21	20.32	19.31	20.80	25.25	23.08	29.44	27.37	22.97

Table 4 Descriptive statistics on minority directors per country. This table presents the proportion of banks with at least one minority director, the average number of directors, and the proportion of minority directors on boards for each country over the period from 2003-2017

Country	Banks with minority directors (%)	Average number of directors	Proportion of minority directors on boards
Austria	60.83	21.75	15.38
Belgium	61.67	15.08	25.89
Denmark	25.83	13.88	12.22
Finland	52.08	8.09	27.42
France	69.62	18.32	25.14
Germany	45.17	19.17	12.62
Greece	60.42	14.15	15.60
Ireland	56.25	13.13	15.39
Italy	72.64	16.90	22.48
Netherlands	58.75	11.21	20.39
Norway	70.83	13.03	14.43
Portugal	100.00	21.57	20.74
Spain	93.63	14.67	44.37
Sweden	85.42	10.73	29.28
Switzerland	51.31	9.62	34.74
UK	95.83	12.77	34.91
Average	66.27	14.63	22.92

Table 5 Propensity score matching compares the risk between banks with and without minority directors. This table presents results for this method for the risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of non-performing loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*). A bank is considered part of the treatment group if it has at least one minority director on its board. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Bank with at least one minority director on the board	3.795	0.377	0.059	47.065
Control group	3.505	0.464	0.056	46.977
Difference	0.290*	-0.087***	0.003	0.088
T-statistic	1.75	3.45	0.66	0.05

Table 6 Effect of the presence and influence of minority directors on bank risk (Equation (1)). This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) and control variables. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority	0.304*** (2.90)	-0.0205*** (-3.28)	-0.000330 (-0.43)	-0.0352 (-0.11)
Lag. dependent	0.889*** (6.97)	0.835*** (6.59)	0.880*** (13.48)	0.717*** (6.23)
BoardSize	0.169 (0.14)	0.0186 (0.17)	-0.00791 (-0.81)	2.667 (0.30)
Independent	1.675 (1.39)	-0.237* (-1.69)	-0.0158 (-0.94)	-6.095 (-1.12)
OneTierBoard	0.00604 (0.29)	0.00547 (0.00)	0.000123 (0.87)	-0.108 (-1.19)
FinancialExpert	0.184 (0.40)	-0.0458 (-1.36)	-0.00476 (-1.20)	-1.977 (-0.78)
Reputation	0.176 (0.40)	-0.0354 (-0.65)	-0.00335 (-0.90)	2.321 (0.86)
Ownership	0.00978 (0.85)	0.00128 (0.76)	0.000146 (0.94)	-0.0608 (-1.11)
Size	-0.103 (-0.33)	-0.0285 (-0.99)	0.000881 (0.26)	0.0247 (0.01)
AssetGrowth	0.357 (0.36)	-0.138 (-1.60)	-0.00900 (-1.16)	-3.410 (-0.88)
Capital	29.98** (2.28)	-3.385** (-2.05)	-0.0901 (-0.57)	77.68 (1.53)
Loan	1.551 (0.65)	-0.347 (-1.07)	0.00321 (0.10)	32.22 (1.42)
Deposit	-1.691 (-0.59)	-0.212 (-0.98)	-0.0214 (-0.78)	-7.933 (-0.45)
OperatingExp	0.0410 (1.37)	-0.00133 (-0.36)	0.0000561 (0.16)	-0.0109 (-0.05)
Legal	-0.0392 (-0.32)	0.00532 (0.33)	-0.00137 (-1.08)	0.721 (0.86)
GDP	0.0733 (1.37)	-0.00841* (-1.82)	-0.00183*** (-3.63)	-0.305 (-1.48)
Constant	-3.505 (-0.46)	1.018* (1.71)	0.0392 (0.64)	-7.297 (-0.21)
Observations	555	597	502	476
AR(2) test (p-value)	(0.13)	(0.48)	(0.85)	(0.14)
Hansen test (p-value)	(0.11)	(0.35)	(0.45)	(0.89)

Table 7 The role of minority directors' reputation of in the market for directorship and financial expertise (Equation (2)). This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*). The dummy variable *dReputation* equals one if at least one of the minority directors obtains a new board position at another firm during the years after the year we identified them as a minority director (Panel A). The dummy variable *dHighFinExp* equals one if at least 75% of the minority directors are financial experts (Panel B). All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
<i>Panel A: Reputation concern in the market for directorship</i>				
Minority (β_1)	0.196 (1.12)	0.0168 (0.99)	-0.000964 (-0.46)	-0.117 (-0.34)
Minority*dReputation (β_2)	0.0775 (0.38)	-0.0480** (-2.50)	0.00163 (0.73)	0.0429 (0.07)
Control variables	Yes	Yes	Yes	Yes
<u>Wald test</u> <i>Reputation concern</i> $\beta_1 + \beta_2 = 0$				
	0.274*** (0.01)	-0.0312*** (0.00)	0.000669 (0.46)	-0.074 (0.89)
Observations	555	597	502	476
AR(2) test (p-value)	(0.14)	(0.35)	(0.69)	(0.10)
Hansen test of over-identification (p-value)	(0.24)	(0.22)	(0.52)	(0.82)
<i>Panel B: Financial expertise</i>				
Minority (β_1)	-0.399 (-0.60)	-0.106 (-0.85)	0.0138 (0.85)	0.565 (0.15)
Minority*dHighFinExp (β_2)	0.693 (1.00)	0.0833 (0.67)	-0.0137 (-0.84)	-0.634 (-0.16)
Control variables	Yes	Yes	Yes	Yes
<u>Wald test</u> <i>High proportion of financial experts</i> $\beta_1 + \beta_2 = 0$				
	0.295*** (0.00)	-0.0225*** (0.00)	0.0000859 (0.90)	-0.069 (0.82)
Observations	555	597	502	476
AR(2) test (p-value)	(0.15)	(0.58)	(0.53)	(0.10)
Hansen test of over-identification (p-value)	(0.25)	(0.35)	(0.31)	(0.87)

Table 8 The role of minority directors with a reputational concern or financial expertise that are chairman. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) when minority directors have a reputational concern and are chairman (Panel A), or when minority directors are financial experts and are chairman (Panel B). The dummy variables *dReputationChairman*/*dFinExpChairman* equal one if one of the minority directors has a reputational concern and is a chairman/is a financial expert and is the chairman. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
<i>Panel A: Reputation concern</i>				
Minority (β_1)	0.240*** (3.23)	-0.0201*** (-3.04)	0.00100 (1.37)	-0.129 (-0.44)
Minority*dReputationChairman (β_2)	0.0573 (1.13)	-0.00405 (-0.78)	-0.00234 (-1.60)	0.0695 (0.08)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.33)	(0.35)	(0.73)	(0.10)
Hansen test of over-identification (p-value)	(0.14)	(0.31)	(0.40)	(0.85)
<i>Panel B: Financial expertise</i>				
Minority (β_1)	0.266** (2.25)	-0.0228* (-1.86)	0.00161 (1.28)	-0.434 (-0.79)
Minority*dFinExpChairman (β_2)	0.00825 (0.05)	-0.00590 (-0.41)	-0.00252 (-1.44)	0.735 (0.85)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.76)	(0.49)	(0.52)	(0.12)
Hansen test of over-identification (p-value)	(0.14)	(0.39)	(0.94)	(0.89)

Table 9 The role of minority directors with a reputational concern or financial expertise, and a position on the audit committee. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) when minority directors have a reputational concern and are on the audit committee (Panel A), or when minority directors are financial experts and are on the audit committee (Panel B). The dummy variables *dReputationAudit*/*dFinExpAudit* equal one if one of the minority directors has a reputational concern and is on the audit committee or is a financial expert and is on the audit committee. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
<i>Panel A: Reputation concern</i>				
Minority (β_1)	0.230*** (2.71)	-0.0191** (-1.99)	0.000315 (0.25)	-0.112 (-0.32)
Minority*dReputationAudit (β_2)	0.137 (0.71)	0.000602 (0.06)	-0.000907 (-0.60)	0.0336 (0.09)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.69)	(0.44)	(0.41)	(0.16)
Hansen test of over-identification (p-value)	(0.14)	(0.47)	(0.44)	(0.92)
<i>Panel B: Financial expertise</i>				
Minority (β_1)	0.437*** (2.79)	-0.0220** (-2.10)	0.00201* (1.83)	-0.156 (-0.25)
Minority*dFinExpAudit (β_2)	-0.147 (-0.58)	0.00745 (0.55)	-0.00293** (-2.37)	0.277 (0.34)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.29)	(0.25)	(0.25)	(0.16)
Hansen test of over-identification (p-value)	(0.21)	(0.18)	(0.57)	(0.77)

Table 10 The role of minority directors with a reputational concern or financial expertise and the level of shareholder protection. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) when they are financial experts in an environment with strong levels of shareholder protection. The dummy variable *dHighFinExp* equals one if at least three of the minority directors are financial experts. The dummy variable *dReputation* equals one if at least one of the minority directors obtains a new board position at another firm during the years after the year we identified them as a minority director. The dummy variable *dHighLegal* equals one when the bank is located in a country with high levels of shareholder protection. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
<i>Panel A: Reputation concern</i>				
Minority (β_1)	0.223* (1.76)	-0.0162 (-0.79)	-0.000474 (-0.21)	0.866 (0.96)
Minority*dReputation (β_2)	0.0794 (0.42)	-0.00165 (-0.06)	-0.000410 (-0.15)	-1.635 (-1.25)
Minority*dHighLegal (β_3)	-0.0710 (-0.38)	0.0217 (1.17)	0.00194 (0.62)	-1.074 (-1.24)
Minority*dReputation* dHighLegal (β_4)	-0.0683 (-0.22)	-0.0216 (-1.11)	-0.00171 (-0.37)	2.482* (1.81)
Control variables	Yes	Yes	Yes	Yes
<u>Wald test</u>				
<i>Reputation concern and low levels of shareholder protection</i> $\beta_1 + \beta_2 = 0$	0.302*** (0.00)	-0.0178* (0.09)	-0.000884 (0.66)	-0.769 (0.26)
<i>No reputation concern and high levels of shareholder protection</i> $\beta_1 + \beta_3 = 0$	0.152 (0.40)	0.00548 (0.74)	0.00146 (0.43)	-0.209 (0.82)
<i>Reputation concern and high levels of shareholder protection</i> $\beta_1 + \beta_2 + \beta_3 + \beta_4 = 0$	0.163 (0.43)	-0.0177 (0.21)	-0.000657 (0.80)	0.638 (0.36)
Observations	555	597	502	476
AR(2) test (p-value)	(0.59)	(0.23)	(0.78)	(0.29)
Hansen test of over-identification (p-value)	(0.17)	(0.36)	(0.60)	(0.88)
<i>Panel B: Financial expertise</i>				
Minority (β_1)	0.636 (0.80)	-0.256 (-1.52)	-0.00998 (-0.79)	5.157 (0.82)
Minority*dHighFinExp (β_2)	-0.276 (-0.34)	0.232 (1.39)	0.00947 (0.76)	-5.738 (-0.94)
Minority*dHighLegal (β_3)	-3.661 (-1.28)	0.528 (1.26)	0.0336 (0.80)	-6.447 (-0.63)
Minority*dHighFinExp* dHighLegal (β_4)	3.536 (1.22)	-0.517 (-1.24)	-0.0338 (-0.80)	7.182 (0.69)
Control variables	Yes	Yes	Yes	Yes
<u>Wald tests</u>				
<i>Financial expertise and low levels of shareholder protection</i> $\beta_1 + \beta_2 = 0$	0.359*** (0.00)	-0.0242* (0.07)	-0.000514 (0.69)	-0.581 (0.26)
<i>No financial expertise and high levels of shareholder protection</i> $\beta_1 + \beta_3 = 0$	-3.025	0.272	0.0237	-1.290

<i>Financial expertise and high levels of shareholder protection,</i> $\beta_1 + \beta_2 + \beta_3 + \beta_4 = 0$	(0.20)	(0.46)	(0.55)	(0.89)
	0.234**	-0.0140	-0.000704	0.154
	(0.02)	(0.40)	(0.55)	(0.78)
Observations	555	597	502	476
AR(2) test (p-value)	(0.19)	(0.73)	(0.44)	(0.18)
Hansen test of over-identification (p-value)	(0.34)	(0.21)	(0.40)	(0.93)

Table 11 Effect of the presence and influence of minority directors on bank risk when there are controlling shareholders. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) when the degree of ownership concentration is high. The dummy variable *dHighOwnership* equals one if the controlling shareholders hold at least 50% of the shares. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority (β_1)	0.188** (2.17)	-0.0173** (-2.36)	-0.00137 (-1.06)	0.0223 (0.06)
Minority*dHighOwnership (β_2)	0.230 (1.68)	-0.00570 (-0.55)	0.00211 (1.42)	-0.326 (-0.42)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.18)	(0.40)	(0.42)	(0.14)
Hansen test of over-identification (p-value)	(0.30)	(0.21)	(0.66)	(0.85)

Table 12 The role of minority directors during the global financial crisis. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) during non-crisis and crisis periods (Panel A), and by differentiating banks that benefit from government support during the crisis (Panel B). The dummy variable *dCrisis* equals one for the period from 2007-2011. The dummy variable *dRescued* equals one for banks that benefit from a rescue measure over the period from 2007-2011. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
<i>Panel A: Crisis vs. non crisis periods</i>				
Minority (β_1)	0.219*** (3.29)	-0.0227*** (-3.99)	0.000238 (0.28)	0.140 (0.61)
Minority*dCrisis (β_2)	-0.0993 (-1.17)	0.00740 (0.65)	-0.00220 (-1.47)	-0.600 (-1.28)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.17)	(0.49)	(0.36)	(0.17)
Hansen test of over-identification (p-value)	(0.18)	(0.42)	(0.57)	(0.92)
<i>Panel B: Rescued banks</i>				
Minority (β_1)	0.294*** (5.03)	-0.0235*** (-3.62)	-0.000427 (-0.46)	-0.154 (-0.61)
Minority*dRescued (β_2)	-0.247 (-1.22)	-0.00695 (-0.30)	0.000330 (0.10)	1.185 (1.03)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.11)	(0.68)	(0.40)	(0.14)
Hansen test of over-identification (p-value)	(0.24)	(0.21)	(0.30)	(0.63)

Table 13 Effect of the presence and influence of minority directors on bank risk for different degrees of bank opacity. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) when the degree of bank opacity is high. The dummy variable *dHighOpacity* equals one if the bank has a higher index of opacity than the median of the group. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority (β_1)	0.175** (2.27)	-0.0189** (-2.13)	-0.000802 (-0.99)	0.430 (1.53)
Minority*dHighOpacity (β_2)	0.217 (1.65)	0.0170 (0.98)	0.00233 (1.28)	-0.298 (-1.06)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.38)	(0.41)	(0.54)	(0.11)
Hansen test of over-identification (p-value)	(0.33)	(0.28)	(0.75)	(0.99)

Table 14. Effect of the presence and influence of minority directors on market valuation and profitability. This table presents the two-step dynamic panel system GMM estimations of market valuation measures (Tobin's Q *Tobin_Q* and shareholder market return *SMR*) and a profitability measure (*ROA*) on the index measuring the presence and influence of minority directors (*Minority*) and control variables. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1.

	Tobin_Q (1)	SMR (2)	ROA (3)
Minority	0.00243** (2.28)	0.0913*** (3.84)	-0.00722 (-0.25)
Lag. dependent	0.696*** (7.24)	-0.181 (-1.23)	-0.0582 (-0.16)
BoardSize	-0.00556 (-0.18)	-0.136 (-0.41)	-0.00483 (-0.72)
Independent	-0.00825 (-0.66)	-0.000197 (-0.00)	0.00140 (0.44)
OneTierBoard	-0.000500 (-1.03)	-0.00851 (-1.27)	0.0000558 (0.52)
FinancialExpert	0.00199 (0.26)	-0.181 (-1.49)	-0.0000751 (-0.04)
Reputation	0.0112 (1.45)	0.354*** (2.67)	0.00423** (2.19)
Ownership	-0.000122 (-0.59)	0.00574 (1.50)	-0.000128* (-1.84)
Size	-0.00374 (-0.65)	0.0249 (0.30)	-0.000824 (-0.73)
AssetGrowth	-0.0233 (-1.19)	0.335 (1.14)	0.00873* (1.81)
Capital	-0.446*** (-3.23)	4.977 (1.14)	0.0840 (1.20)
Loan	0.0338 (0.92)	0.0891 (0.12)	0.00809 (0.75)
Volatility	-0.0420*** (-3.08)	-0.920*** (-3.37)	-0.00423 (-0.52)
Legal	-0.0000769 (-0.02)	0.0826 (1.20)	0.000123 (0.09)
GDP	-0.00106 (-1.24)	-0.0345 (-1.64)	0.000414 (1.26)
Constant	0.404** (2.35)	-0.516 (-0.31)	0.0159 (0.58)
Observations	597	600	599
AR(2) test (p-value)	(0.74)	(0.16)	(0.28)
Hansen test (p-value)	(0.89)	(0.11)	(0.47)

Online Appendix

Table A.1 Distribution of banks by country in 2017. This table presents the number of listed banks reported by Bloomberg, the number of banks in our sample, and the total assets of our sample of banks divided by the total assets of all listed banks in Bloomberg.

Country	Number of listed banks in Bloomberg	Number of banks in the sample	Total assets of sample banks divided by total assets of all listed banks in Bloomberg (%)
Austria	7	5	89.11
Belgium	5	3	69.71
Denmark	5	5	96.75
Finland	4	2	64.85
France	11	9	97.85
Germany	9	8	99.95
Greece	5	4	98.62
Ireland	4	2	65.33
Italy	25	10	84.82
Netherlands	6	5	98.28
Norway	4	3	71.32
Portugal	4	2	75.07
Spain	10	8	95.85
Sweden	6	5	99.94
Switzerland	30	21	67.26
United Kingdom	14	11	98.99
Total	149	103	80.81

Table A.2 Proportion of banks controlled by different shareholder types (in percent). This table displays the proportion of banks with the controlling shareholder being a nonfinancial company, a financial company, a bank, a foundation or research institute, an individual or family, or a state authority.

	2003	2005	2007	2009	2011	2013	2015	2017
Nonfinancial company	38.10	30	24.64	20.83	21.62	19.77	20.79	19.42
Financial company	28.57	34	23.19	30.56	31.08	34.88	32.67	33.01
Bank	19.05	28	36.23	30.56	27.03	25.58	27.72	26.21
Foundation/Research Institute	7.14	6	7.25	6.94	5.41	3.49	2.97	2.91
Individual/family	7.14	2	2.90	1.39	4.05	5.81	5.94	7.77
State authority	0	0	5.80	9.72	10.81	10.47	9.90	10.68

Table A.3 Proportion of directors related to minority shareholders, per criteria (in percent). This table shows statistics on different criteria of relatedness of directors to shareholders: they are an employee of minority shareholders; they are minority shareholders of the bank; they have the same family name as minority shareholders. The percentage of related directors according to each criterion is calculated as the number of related directors according to this criterion divided by the total number of related directors. Figures are in percentages.

Year	Being employed by shareholders	Being minority shareholders of the bank	Sharing family name with minority shareholders
2003	78.18	21.81	0
2005	76.58	22.83	0.60
2007	89.56	10.44	0
2009	88.50	8.37	3.04
2011	90.95	9.06	0
2013	84.00	11.90	4.10
2015	85.60	11.97	2.35
2017	88.33	10.43	1.24
Average	85.72	12.76	1.53

Table A.4 Proportion of minority directors on boards according to the percentage of shares held by the largest shareholders (%).

Voting rights of the largest shareholder (%)	Proportion of minority shareholders
5 to 10	17.28
10 to 20	26.36
20 to 50	16.89
Greater than 50	18.53

Table A.5 This table shows the correlation matrix. All variables are as defined in Table 1. The *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
1.DD	1																		
2.Volatility	-0.731***	1																	
3.NPL	-0.386***	0.449***	1																
4.RWA	0.141**	-0.0636	0.177***	1															
5.Minority	-0.0716	0.0446	0.0189	-0.231***	1														
6.BoardSize	-0.0353	-0.00937	0.0456	0.131**	-0.131**	1													
7.OneTierBoard	0.166***	-0.166***	-0.155**	-0.00315	-0.250***	0.144**	1												
8.Independent	-0.0253	-0.0325	0.00617	-0.178***	0.324***	-0.283***	-0.125*	1											
9.FinancialExpert	0.0419	-0.0683	-0.0827	-0.220***	0.234***	-0.00111	-0.170***	0.204***	1										
10.Reputation	-0.231***	0.126**	-0.0740	-0.131**	0.0560	0.00957	-0.0894	0.0939	0.287***	1									
11.Ownership	0.00162	0.144**	0.120*	0.0383	-0.137**	-0.0938	0.0942	-0.399***	-0.138**	-0.105*	1								
12.Size	-0.262***	0.155**	-0.0228	-0.407***	0.289***	0.326***	-0.251***	0.131**	0.264***	0.308***	-0.215***	1							
13.AssetGrowth	0.213***	-0.214***	-0.114*	0.0578	0.0211	0.0337	-0.107*	0.00190	0.0859	0.00102	-0.126**	0.00654	1						
14.Capital	0.244***	-0.171***	0.219***	0.571***	-0.0747	-0.135**	0.00459	0.0452	-0.159**	-0.323***	-0.0435	-0.000***	0.0343	1					
15.Loan	0.0984*	-0.00549	0.328***	0.453***	-0.0376	-0.229***	0.0796	0.113*	-0.285***	-0.197***	0.0442	-0.496***	-0.0111	0.403***	1				
16.Deposit	0.153**	-0.167***	0.143**	0.158**	-0.0143	-0.244***	0.199***	0.0695	-0.0744	-0.249***	0.0738	-0.470***	0.0632	0.331***	0.356***	1			
17.OperatingExp	-0.0383	0.000854	-0.0229	-0.0690	-0.0212	0.135**	0.104*	-0.0608	0.0362	0.0152	-0.0116	0.0774	-0.0604	-0.105*	-0.100*	-0.0206	1		
18.Legal	0.203***	-0.193***	-0.188***	-0.286***	0.132**	-0.275***	0.101*	0.184***	0.232***	-0.107*	-0.140**	0.144**	-0.0065	-0.159**	-0.218***	-0.0902	0.0295	1	
19.GDP	0.388***	-0.416***	-0.195***	-0.139**	-0.0939	-0.103*	0.0269	0.0899	0.116*	-0.182***	-0.113*	-0.000815	0.182***	0.0675	-0.0708	0.0540	-0.024	0.303***	1

Table A.6 Effect of the presence and influence of minority directors on bank risk (Equation (1), Fixed effects regressions). This table presents the regression results of the effect of the presence of minority directors on bank risk (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) using fixed effects with standard errors clustered at the country level. The index *Minority* measures the presence and influence of minority directors. The z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. All variables are as defined in Table 1.

	DD	Volatility	NPL	RWA
	(1)	(2)	(3)	(4)
Minority	0.0937** (2.93)	-0.0104** (-2.58)	-0.0000639 (-0.37)	-0.00615 (-0.05)
Lag. dependent	0.521*** (5.02)	0.804*** (6.35)	0.926*** (90.14)	0.418*** (2.92)
BoardSize	0.181 (0.67)	-0.0676 (-1.06)	0.00173 (0.73)	2.181 (1.48)
Independent	-0.884* (-2.08)	0.0440 (0.95)	-0.00820** (-2.31)	5.034*** (3.89)
OneTierBoard	0.00260 (0.51)	-0.000723** (-2.53)	-0.000156*** (-3.41)	-0.0105 (-0.21)
FinancialExpert	0.269** (2.27)	-0.0433** (-2.35)	-0.00119** (-2.70)	0.816 (0.85)
Reputation	-1.443*** (-3.29)	0.136*** (3.46)	0.00429 (1.03)	8.041** (2.53)
Ownership	0.00232 (0.68)	0.000647 (0.95)	0.00012** (2.21)	0.00366 (0.14)
Size	-1.070*** (-4.04)	0.0780** (2.14)	0.00705*** (3.28)	-8.806** (-2.81)
AssetGrowth	1.563*** (4.00)	-0.193** (-2.47)	-0.00547 (-1.53)	-0.648 (-0.26)
Capital	3.442 (0.63)	-0.468 (-0.76)	-0.0477 (-0.70)	-28.66 (-0.97)
Loan	-0.615 (-0.91)	0.0721 (0.86)	0.0479** (2.12)	22.96** (2.15)
Deposit	0.799 (0.82)	-0.458* (-2.02)	-0.0148 (-1.22)	-7.070 (-0.92)
OperatingExp	0.00259 (0.55)	-0.000198 (-0.14)	0.0000797 (0.49)	0.0429 (1.28)
Legal	-0.397 (-1.17)	0.0338 (0.73)	-0.000752 (-0.30)	2.074* (1.86)
GDP	0.0776* (2.09)	-0.00415 (-0.75)	-0.00182*** (-4.89)	-0.395*** (-3.07)
Constant	15.32*** (3.41)	-0.570 (-0.99)	-0.0912** (-2.58)	100.5** (2.35)
Observations	555	597	502	476
Cluster level	Country	Country	Country	Country

Table A.7 Financial expertise and minority directors. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the proportion of directors with financial expertise (*FinancialExpert*). The dummy variable *dMinority* equals one if there is at least one minority director on the board. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
FinancialExpert (β_1)	0.229 (0.08)	0.161 (0.40)	-0.0141 (-1.09)	5.890 (1.25)
FinancialExpert*dMinority (β_2)	0.157*** (2.91)	-0.727* (-1.75)	0.00585 (0.33)	-6.623 (-0.88)
Control variables	Yes	Yes	Yes	Yes
<u>Wald test</u>				
<i>Financial expertise and minority directors</i> $\beta_1 + \beta_2 = 0$	0.386*** (0.0)	-0.566** (0.04)	-0.00827 (0.60)	-0.733 (0.87)
Observations	555	597	502	476
AR(2) test (p-value)	(0.16)	(0.25)	(0.53)	(0.14)
Hansen test of over-identification (p-value)	(0.35)	(0.17)	(0.28)	(0.74)

Table A.8 Robustness check (1): Alternative criteria to identify controlling shareholders and related directors. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*), and control variables. In Panel A, we use the control threshold of 10% (instead of 5%) to identify controlling and minority shareholders. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1 of the paper

	Panel A: Control threshold of 10%			
	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority	0.285** (2.13)	-0.0129*** (-2.71)	-0.000431 (-0.63)	-0.331 (-0.84)
Lag. dependent	0.911*** (5.88)	0.863*** (6.39)	0.857*** (16.85)	0.733*** (3.98)
BoardSize	0.433 (0.55)	-0.0184 (-0.13)	-0.00399 (-0.29)	3.823 (0.77)
Independent	1.425 (0.93)	-0.0211 (-0.22)	-0.0145 (-0.67)	-8.433* (-1.73)
OneTierBoard	0.0149 (0.77)	0.000223 (0.14)	0.0000183 (0.16)	-0.0788 (-0.86)
FinancialExpert	0.342 (0.53)	-0.0509 (-1.23)	0.000675 (0.11)	-1.662 (-0.72)
Reputation	0.00275 (0.01)	0.0254 (0.62)	-0.00376 (-1.12)	2.672 (1.04)
Ownership	0.0129 (1.05)	-0.00922 (-0.06)	0.000202 (1.17)	-0.0244 (-0.39)
Size	-0.0804 (-0.23)	-0.0364 (-1.41)	0.00286 (1.06)	0.861 (0.43)
AssetGrowth	0.143 (0.13)	-0.178** (-2.15)	-0.00943 (-0.76)	-0.842 (-0.16)
Capital	27.43*** (2.71)	-2.461** (-1.98)	-0.00303 (-0.02)	77.06 (1.12)
Loan	0.255 (0.09)	-0.198 (-0.99)	0.0157 (0.45)	33.04 (1.23)
Deposit	-0.428 (-0.17)	-0.191 (-0.87)	-0.0298 (-1.07)	0.616 (0.03)
OperatingExp	0.0140 (0.39)	-0.00273 (-0.08)	-0.00875 (-0.27)	-0.161 (-0.73)
Legal	-0.0422 (-0.31)	-0.00321 (-0.28)	-0.00186 (-1.15)	0.938 (1.24)
GDP	0.0635 (1.06)	-0.00394 (-0.78)	-0.00193*** (-2.82)	-0.306 (-1.30)
Constant	-4.584 (-0.62)	0.996 (1.59)	-0.00281 (-0.04)	-26.74 (-0.87)
Observations	477	510	425	400
AR(2) test (p-value)	(0.37)	(0.17)	(0.67)	(0.20)
Hansen test of over- identification (p-value)	(0.26)	(0.39)	(0.42)	(0.72)

Table A.8 (cont.) In Panel B, we exclude the criterion of being related to minority shareholders to be classified as a minority director.

	Panel B			
	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority	0.309*** (2.88)	-0.0213*** (-3.26)	-0.000223 (-0.29)	-0.0289 (-0.09)
Lag. dependent	0.892*** (6.92)	0.854*** (6.58)	0.880*** (13.00)	0.717*** (6.16)
BoardSize	0.163 (0.14)	0.0119 (0.11)	-0.00744 (-0.75)	2.631 (0.30)
Independent	1.486 (1.33)	-0.237 (-1.64)	-0.0162 (-0.99)	-5.879 (-1.13)
OneTierBoard	0.00611 (0.29)	-0.00578 (-0.03)	0.000113 (0.82)	-0.111 (-1.21)
FinancialExpert	0.171 (0.36)	-0.0468 (-1.37)	-0.00498 (-1.25)	-2.046 (-0.82)
Reputation	0.174 (0.41)	-0.0357 (-0.68)	-0.00318 (-0.88)	2.236 (0.82)
Ownership	0.0100 (0.87)	0.00126 (0.78)	0.000138 (0.90)	-0.0602 (-1.11)
Size	-0.114 (-0.37)	-0.0284 (-0.98)	0.000602 (0.17)	0.0115 (0.01)
AssetGrowth	0.293 (0.29)	-0.127 (-1.45)	-0.00945 (-1.19)	-3.607 (-0.91)
Capital	30.40** (2.41)	-3.426** (-2.03)	-0.101 (-0.64)	76.81 (1.53)
Loan	1.493 (0.63)	-0.333 (-1.03)	0.00506 (0.16)	32.15 (1.39)
Deposit	-1.876 (-0.69)	-0.208 (-0.95)	-0.0217 (-0.79)	-7.860 (-0.45)
OperatingExp	0.0406 (1.35)	-0.00130 (-0.35)	0.00473 (0.14)	-0.00761 (-0.04)
Legal	-0.0349 (-0.30)	0.00565 (0.36)	-0.00132 (-1.02)	0.722 (0.89)
GDP	0.0731 (1.39)	-0.00802* (-1.76)	-0.00178*** (-3.58)	-0.310 (-1.48)
Constant	-3.271 (-0.45)	1.025* (1.68)	0.0412 (0.66)	-6.831 (-0.20)
Observations	555	597	505	476
AR(2) test (p-value)	(0.12)	(0.49)	(0.86)	(0.14)
Hansen test of over- identification (p-value)	(0.11)	(0.36)	(0.47)	(0.89)

Table A.8 (cont.) In Panel C, we exclude minority directors having the same family name as minority shareholders.

	Panel C			
	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority	0.281** (2.50)	-0.0194*** (-3.19)	-0.000183 (-0.24)	-0.0418 (-0.13)
Lag. dependent	0.923***	0.852***	0.881***	0.723***

	(6.57)	(6.46)	(12.97)	(6.42)
BoardSize	0.0346	0.00765	-0.00839	2.264
	(0.03)	(0.06)	(-0.86)	(0.26)
Independent	1.908	-0.194	-0.0155	-5.919
	(1.50)	(-1.43)	(-0.92)	(-1.16)
OneTierBoard	0.00463	0.00875	0.000119	-0.105
	(0.23)	(0.04)	(0.82)	(-1.07)
FinancialExpert	0.179	-0.0455	-0.00543	-1.938
	(0.39)	(-1.32)	(-1.29)	(-0.79)
Reputation	0.0822	-0.0300	-0.00335	2.440
	(0.20)	(-0.59)	(-0.92)	(0.89)
Ownership	0.00968	0.00133	0.000141	-0.0628
	(0.83)	(0.80)	(0.90)	(-1.11)
Size	0.0263	-0.0280	0.000377	0.130
	(0.08)	(-0.92)	(0.11)	(0.08)
AssetGrowth	0.480	-0.124	-0.0102	-3.546
	(0.51)	(-1.35)	(-1.29)	(-0.81)
Capital	33.50***	-3.461**	-0.113	75.02
	(2.66)	(-2.10)	(-0.68)	(1.64)
Loan	2.020	-0.321	0.00405	30.99
	(0.77)	(-0.93)	(0.12)	(1.33)
Deposit	-1.535	-0.249	-0.0246	-6.712
	(-0.58)	(-1.07)	(-0.85)	(-0.40)
OperatingExp	0.0408	-0.0594	0.00394	-0.0134
	(1.40)	(-0.16)	(0.11)	(-0.07)
Legal	-0.0206	0.00285	-0.00136	0.687
	(-0.18)	(0.17)	(-1.04)	(0.89)
GDP	0.0612	-0.00762*	-0.00175***	-0.310
	(1.12)	(-1.73)	(-3.23)	(-1.46)
Constant	-5.235	1.025	0.0492	-7.364
	(-0.70)	(1.63)	(0.76)	(-0.23)
Observations	555	597	505	476
AR(2) test	(0.23)	(0.48)	(0.88)	(0.14)
(p-value)				
Hansen test of over-identification	(0.18)	(0.30)	(0.48)	(0.89)
(p-value)				

Table A.8 (cont.) Panel D gives the results for at least one minority director having equity holdings in the bank (*dEquityHoldings*).

	Panel D			
	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority (β_1)	0.230*** (2.75)	-0.0206** (-2.06)	0.000268 (0.28)	0.00170 (0.01)
Minority*dEquityHoldings (β_2)	-0.0370 (-0.16)	0.0582 (1.08)	0.00234 (0.70)	-0.384 (-0.22)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.42)	(0.45)	(0.91)	(0.59)
Hansen test of over-identification (p-value)	(0.18)	(0.44)	(0.53)	(0.86)

Table A.8 (cont.) Panel E shows the percentage of minority directors.

	Panel E			
	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority	2.474*** (3.22)	-0.166*** (-3.38)	-0.00302 (-0.55)	-0.369 (-0.15)
Lag. dependent	0.895*** (6.64)	0.819*** (6.52)	0.882*** (14.06)	0.704*** (5.13)
BoardSize	0.0797 (0.06)	0.0159 (0.13)	-0.00982 (-1.12)	2.361 (0.22)
Independent	1.379 (1.09)	-0.193 (-1.33)	-0.0124 (-0.79)	-5.669 (-0.98)
OneTierBoard	0.00606 (0.26)	-0.000232 (-0.13)	0.000102 (0.81)	-0.105 (-1.09)
FinancialExpert	0.190 (0.41)	-0.0465 (-1.27)	-0.00483 (-1.23)	-1.998 (-0.87)
Reputation	0.279 (0.64)	-0.0375 (-0.67)	-0.00316 (-0.90)	2.513 (0.87)
Ownership	0.0145 (1.28)	0.00127 (0.77)	0.000138 (0.93)	-0.0677 (-1.22)
Size	0.0393 (0.15)	-0.0303 (-1.15)	0.00123 (0.46)	0.273 (0.15)
AssetGrowth	0.300 (0.31)	-0.138 (-1.51)	-0.00806 (-1.13)	-3.141 (-0.79)
Capital	29.03** (2.50)	-3.457** (-2.27)	-0.0845 (-0.55)	81.36 (1.25)
Loan	1.659 (0.76)	-0.265 (-0.84)	0.00473 (0.14)	33.79 (1.44)
Deposit	-0.714 (-0.26)	-0.228 (-0.96)	-0.0202 (-0.84)	-5.627 (-0.31)
OperatingExp	0.0279 (0.87)	-0.00119 (-0.32)	0.0000502 (0.16)	-0.0224 (-0.12)
Legal	-0.0204 (-0.18)	0.00592 (0.38)	-0.00142 (-1.30)	0.714 (0.74)
GDP	0.0692 (1.27)	-0.00825* (-1.87)	-0.00183*** (-3.67)	-0.326 (-1.47)
Constant	-5.245 (-0.78)	0.992* (1.69)	0.0388 (0.67)	-11.25 (-0.27)
Observations	555	597	505	476
AR(2) test (p-value)	(0.14)	(0.45)	(0.85)	(0.15)
Hansen test of over- identification (p-value)	(0.17)	(0.33)	(0.47)	(0.86)

Table A.9 Robustness check (2): Subsample analysis. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL* and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*), and control variables. In Panel A, we exclude Spain and Italy that prescribe the presence of minority directors with no obligation for companies to comply or explain and deviations from the rule. In Panel B, we exclude Switzerland as we have a relatively high number of banks in this country. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1 of the paper.

	Panel A: Exclusion of Italy and Spain			
	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority	0.379*** (2.76)	-0.0174* (-1.82)	-0.000231 (-0.41)	-0.0224 (-0.09)
Lag. dependent	0.896*** (5.61)	0.780*** (3.42)	0.885*** (10.61)	0.764*** (5.14)
BoardSize	0.245 (0.26)	-0.00693 (-0.05)	-0.00237 (-0.28)	-0.659 (-0.14)
Independent	1.857 (1.24)	-0.124** (-2.18)	-0.0184 (-0.99)	-8.443 (-1.42)
OneTierBoard	-0.00769 (-0.27)	-0.00871 (-0.05)	0.000136 (0.78)	-0.149 (-1.05)
FinancialExpert	0.186 (0.34)	-0.0145 (-0.39)	-0.00428 (-0.90)	-2.628* (-1.84)
Reputation	-0.0406 (-0.06)	0.0894 (1.60)	-0.00536 (-1.10)	1.205 (0.52)
Ownership	-0.00296 (-0.22)	0.00198 (1.36)	0.000119 (1.16)	-0.0493 (-0.84)
Size	-0.143 (-0.38)	-0.00799 (-0.24)	0.000258 (0.10)	1.107 (0.62)
AssetGrowth	-0.340 (-0.24)	-0.143 (-1.35)	-0.0134 (-1.33)	-6.589 (-1.57)
Capital	23.24* (1.79)	-2.245 (-1.30)	-0.230 (-1.25)	50.49 (0.82)
Loan	0.567 (0.20)	-0.0174 (-0.07)	0.0251 (0.79)	28.01 (1.65)
Deposit	-2.783 (-1.06)	-0.233 (-0.87)	-0.0311 (-0.94)	-7.880 (-0.32)
OperatingExp	0.00968 (0.27)	0.00205 (0.48)	0.000212 (0.60)	-0.118 (-0.51)
Legal	-0.0760 (-0.58)	0.00480 (0.24)	-0.00174 (-0.86)	0.965 (0.86)
GDP	0.105 (1.43)	-0.00992* (-1.68)	-0.00125** (-2.45)	-0.297 (-1.50)
Constant	-0.516 (-0.09)	0.446 (0.67)	0.0361 (0.67)	-6.099 (-0.17)

Observations	435	472	380	376
AR(2) test (p-value)	(0.13)	(0.38)	(0.88)	(0.16)
Hansen test of over- identification (p-value)	(0.18)	(0.27)	(0.37)	(0.99)

Table A.9 (cont.)

	Panel B: Exclusion of Switzerland			
	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority	0.211*** (2.72)	-0.0181** (-2.42)	-0.000390 (-0.89)	0.104 (0.43)
Lag. dependent	0.869*** (6.83)	0.799*** (4.45)	0.879*** (20.59)	0.693*** (5.39)
BoardSize	0.400 (0.59)	0.0476 (0.37)	-0.00106 (-0.08)	3.279 (0.49)
Independent	1.316 (0.97)	-0.167 (-0.66)	-0.00540 (-0.34)	-11.45 (-1.44)
OneTierBoard	0.00518 (0.32)	-0.000691 (-0.24)	0.0000555 (0.44)	-0.111 (-1.27)
FinancialExpert	0.157 (0.33)	-0.0416 (-1.01)	-0.00431 (-1.04)	-2.207 (-1.40)
PoliticalConnected	0.199 (0.50)	-0.0652 (-1.24)	-0.00222 (-0.76)	2.388 (1.09)
Size	0.0119 (1.20)	0.00147 (0.79)	0.000136 (1.11)	-0.0596 (-1.24)
AssetGrowth	-0.0338 (-0.12)	-0.00473 (-0.12)	0.00323 (1.10)	-1.625 (-0.84)
Capital	0.267 (0.34)	-0.163 (-1.56)	-0.00264 (-0.37)	-6.489 (-1.33)
Loan	21.95** (2.24)	-3.796* (-1.76)	0.0347 (0.29)	110.7** (2.22)
Deposit	1.107 (0.46)	0.0342 (0.07)	0.0253 (0.74)	35.03 (1.37)
OperatingExp	1.823 (0.73)	-0.351 (-1.21)	-0.00902 (-0.46)	-24.59 (-1.29)
Legal	0.0133 (0.32)	-0.00379 (-0.77)	0.000212 (0.91)	0.0357 (0.31)
GDP	0.0311 (0.31)	0.00957 (0.60)	-0.000673 (-0.62)	0.835 (1.25)
Constant	0.0513 (1.05)	-0.00824 (-1.16)	-0.00189*** (-4.56)	-0.252 (-1.30)
Observations	-5.392	0.554	-0.0374	15.61
AR(2) test (p-value)	(-0.19)	(0.37)	(-0.65)	(0.15)
Hansen test of over- identification (p-value)	(0.14)	(0.24)	(0.61)	(0.89)

Table A.10 Robustness check (3): The role of minority directors with political connections. This table presents the two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, ratio of nonperforming loans to total assets *NPL*, and ratio of risk-weighted assets to total assets *RWA*) on the index measuring the presence and influence of minority directors (*Minority*) when minority directors are politically connected, and control variables. The dummy variable *dPoliticalConnected* equals one if at least one of the minority directors is politically connected. All independent variables are treated as endogenous except *Legal* and *GDP*. Endogenous variables are instrumented by their past values. The Z-statistics are in parentheses; and the *, **, and *** denote significance at the 10%, 5%, and 1% levels. AR(2) tests for the absence of second-order correlation in the first-differenced residuals. The Hansen test of over-identification is under the null that all instruments are valid. All variables are as defined in Table 1.

	DD (1)	Volatility (2)	NPL (3)	RWA (4)
Minority (β_1)	0.274*** (2.82)	-0.0240*** (-3.42)	-0.000767 (-0.88)	-0.276 (-0.86)
Minority*dPoliticalConnected (β_2)	-0.127 (-1.07)	0.0105 (1.34)	-0.000838 (-0.75)	0.494 (1.05)
Control variables	Yes	Yes	Yes	Yes
Observations	555	597	502	476
AR(2) test (p-value)	(0.25)	(0.47)	(0.441)	(0.17)
Hansen test of over-identification (p-value)	(0.20)	(0.60)	(0.27)	(0.79)