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# Examining the impact on risk when directors are related to minority shareholders in closely-held banks

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## Abstract

Using a panel of European banks with a controlling shareholder over the period 2003-2017, we examine whether the presence of directors related to minority shareholders on the board has an impact on bank risk. We find that the inclusion of minority shareholder related directors results in lower risk. Our results depend crucially on whether or not such directors have financial expertise and a decisive position on the board, while the observed decrease in risk does not depend on their political connections. To identify the relationship, we use a dynamic generalized method of moments approach to estimation.

*JEL Classification:* G21, G28, G32

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

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## 1. Introduction

The failure of a variety of internal governance mechanisms has been highlighted as a major contributing factor to the last global financial crisis (Kirkpatrick, 2009; Basel Committee on Banking Supervision, 2010). As banks are tightly regulated, with restrictions on bank entry and activities, the effectiveness of many traditional mechanisms intended to address corporate governance problems is limited in this industry (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). As a consequence, the board of directors as an internal governance mechanism plays a particularly important role in the banking sector to address agency problems and control risk.

Common internal corporate governance mechanisms that are effective in banks with a dispersed ownership structure, addressing the agency conflict between managers and shareholders, are not necessarily appropriate to address the corporate governance issues arising in banks with a controlling shareholder (i.e. closely-held banks), where a further agency conflict between majority and minority shareholders arises (Faccio and Lang, 2002). Controlling shareholders could engage in the expropriation of minority shareholders, by pursuing private benefits through diversion of assets and profits outside the firm (Johnson et al., 2000). Several theoretical papers show that the extraction of private benefits has deadweight costs that increase the cost of outside funds for the controlling shareholders, demonstrating that it is optimal for controlling shareholders of firms with valuable growth opportunities to commit to limiting their expropriation 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 as a signal to the market that minority shareholders are not at risk of such expropriation by the majority shareholder could be the nomination of board directors that are related to, and thus can be expected to represent the interests of, minority shareholders; for brevity, we shall refer to these as minority directors from here on. Whereas this obviously incurs private costs, the market may in fact reward banks that include minority directors on their boards, leading to an increase in their market value.

While the presence of such minority directors could be beneficial for the resolution of the agency conflict between majority and minority shareholders, it might also intensify the additional agency conflict arising for banks between shareholders and debtholders, with potentially important implications for risk-taking. Banks are characterized by their highly leveraged capital structure, their inherent complexity and opacity, and the fact that the interests of their shareholders and those of their debtholders and regulators often diverge. In particular, bank shareholders have strong

incentives to favor ‘excessively’ risky investments, with potential losses largely shifted to debtholders, the deposit insurer and/or taxpayers (Galai and Masulis, 1976; Jensen and Meckling, 1976; Merton, 1977). The agency conflict between debtholders and shareholders could be even stronger in the case of closely-held banks that include minority directors on their board, i.e. ones related to minority shareholders. Bank risk might increase if minority shareholders’ risk appetite is greater than that of controlling shareholders; this could be due to possibly more extensive diversification of their wider portfolio (Zhang, 1998; Paligorova, 2010; Faccio et al., 2011). In a similar vein, 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 may pursue more conservative projects than minority shareholders to secure the private benefits they can extract from the firm. On the other hand, minority directors could also possibly be reluctant to support riskier decisions in order to maintain their reputation in the market for directorships, thereby increasing their chances to obtain seats on other boards (Fama and Jensen, 1983).

An interesting question at the empirical level, not addressed in the literature so far, is then whether the presence of minority directors on the board of banks with controlling shareholders has an impact on bank risk. Our objective in this paper is to determine whether closely-held banks that appoint directors related to minority shareholders, possibly in order to address the agency conflict between majority and minority shareholders, would be able to do so without at the same time worsening the agency conflict between shareholders and debtholders/regulators, which would lead to increased bank risk-taking.

We explore several possible ways in which the presence of minority directors could affect banking risk. The first examines the role played by the ability of minority directors to oversee accounting controls and financial reporting. In particular, we examine whether the presence of minority directors with financial expertise could contribute to reducing banking risk, or might rather increase it. On one hand, a board with greater financial expertise can identify risks with excessive downside and can steer managers away from such risks (Güner et al. 2008; Minton et al., 2014). On the other hand, Mehran et al. (2011) argued that there is a “dark side” to expertise, as expert board members may be hired to increase risk-taking with the aim of boosting the residual claims of shareholders.

Next, we investigate whether the presence of minority directors with financial expertise is in itself sufficient to influence risk-taking, or if they might further need to have more concrete, formal means to influence the board decision. For this, we explore what impact, if any, the position of minority directors on the board (e.g. being a chairman or in the audit committee) and the degree of shareholder protection might have on bank risk-taking.

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 performed significantly worse during the crisis.

Finally, we look into the potential role of political connections of minority directors on banking risk. Firms do not 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 if they engaged in helping firms for private rather than public benefit. However, 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 having political connections.

Our analysis focusses on European countries, for two reasons. First, a majority of banks in that region have a concentrated ownership structure, even if they are listed on 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 European listed closely-held banks for the period spanning 2003-2017. For this, we assemble detailed data on boards of directors and ownership structure, 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 board members when present. Most of these minority directors are related to shareholders through actually 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 reveal that it is, in fact, the presence of minority directors with financial expertise and a decisive position on the board that drives this observed decrease in risk, whereas their political connections and the level of shareholder protection have not significant impact on this relationship. Our results also show that while the presence of minority directors is associated with a decrease in risk in normal times, their presence did not achieve

moderation of banking risk during the last financial crisis. Interestingly, we also find that the presence of minority directors on bank boards has a positive and significant impact on market valuation, which might help explain why a large number of closely-held European banks include minority directors on their board.

We are careful in allowing for the endogeneity issues pervading all empirical studies relating corporate governance aspects to firm risk (e.g., Hermalin and Weisbach, 1998; Adams et al. 2010). In particular, we address the potential endogeneity problem inherent in the analysis by exploiting the panel dimension of our dataset using a dynamic generalized method of moments (GMM) approach to estimation. We also apply propensity score matching techniques, as in Drucker and Puri (2005), to check for the robustness of our results; these confirm our GMM regression results.

Our contributions to the literature are then as follows: we contribute to the corporate governance literature for banks with a controlling shareholder, highlighting the potentially important role played by minority directors in addressing the complex interplay of agency problems faced by the many stakeholders relevant for banks. Our study also contributes to the growing empirical literature documenting the importance of having directors with financial expertise on bank boards. Our findings have relevant practical implications, as they suggest that the presence of minority directors may not in itself be enough to make boards accountable and effective in closely-held banks. This has relevant implications for regulators and corporate governance reform proponents evaluating the effectiveness of boards in controlling bank risk-taking, with potentially important policy implications for the design of corporate boards.

The remainder of the paper is organized as follows. Section 2 describes our sample, defines the ownership variables and the index that measures the presence and influence of minority directors, and provides some descriptive statistics. Section 3 presents the methodology used to conduct our empirical investigation and discusses our main results. Section 4 discusses further investigations; Section 5 contains robustness checks, and Section 6 concludes the paper.

## **2. Sample and data description**

### ***2.1. Our sample***

Our sample includes bank holding companies, commercial banks and investment banks from 16 European countries<sup>2</sup> 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

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<sup>2</sup> Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

collected the relevant information on board and ownership structure and financial statements for the period 2003-2017, sampling at two-year intervals as in Wintoki et al. (2012) to allow for the high degree of persistence of board structures (see e.g. Zhou, 2001). We collect data on board structures and directors from BoardEx, on bank ownership structure from Bankscope and Bloomberg, and financial statement data from Bloomberg. In 2017, our sample contains 21 bank holding companies, 79 commercial banks, and 3 investment banks, for a total of 103 banks; see Table A.1 in Appendix A for a breakdown by country. On average, our sample covers around 81% of banks' total assets of all listed banks covered by Bloomberg in 2017. We also draw on market data from Bloomberg for the construction of risk measures, as well as macroeconomic data from the World Bank for use as control variables. Financial data was winsorized at the 1% and 99% levels (our results are 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 is to identify banks with at least one controlling shareholder, with significant influence over the selection of the bank's board. We define closely-held banks as those where at least one shareholder holds more than 5% of shares.<sup>3</sup> On average, the controlling shareholders thus defined hold 40 % of the bank's shares in our sample. The threshold of 5% corresponds to the one we also use, in a second step, to characterize minority shareholders. While a threshold of 10% may be more commonly used for the characterization of controlling shareholders, we consider this threshold too large for proper identification of minority shareholders with stakes allowing only limited direct influence over bank decision making. However, we also test the robustness of our results by using the control threshold of 10% instead of 5% (see Section 5).

The most prominent types of controlling shareholder in our sample are banks, and financial and non-financial companies (see Table A.2). Foundations/research institutes and individuals/families present much smaller proportions of controlling shareholders, while public authorities only appear as controlling shareholders starting with the global financial crisis.

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<sup>3</sup> A similar threshold is e.g. used in Kim et al. (2007).

### ***2.3. Index of relatedness of minority directors***

We first identify minority directors, i.e. directors who are related to minority shareholders, and then construct a board-level index characterizing the strength of the relatedness between directors and minority shareholders.

We use three criteria matching both biographical information and bank ownership structure to identify if a director is related to a minority shareholder:<sup>4</sup> (1) they are an employee of the minority shareholder; (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.<sup>5</sup>

We first compute individual scores based on two factors to measure the strength of the relatedness between a director and a minority shareholder, 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 in the past. When directors are, for example, current employees of a minority shareholder of the bank, they might have strong incentives to act in the interest of the persons that can fire them. However, when the relatedness is already in the past, the related director is less directly influenced by minority shareholders, thus their impact should be less significant than in the first case. 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).

An overall “score of relatedness” is then computed at the bank level by taking the average of the “score of relatedness” of all directors. We then use these scores to compute our index. Banks with a positive “score of relatedness” are ranked into deciles to obtain a corresponding index of relatedness that ranges from 1 to 10. The “score of relatedness” of a bank being zero indicates that its board of directors is totally independent from minority shareholders, and we accordingly set the index of relatedness at 0.

### ***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 board seats. The proportion of minority directors is therefore relatively high on

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<sup>4</sup> We are, however, unable to ascertain who does in fact nominate particular directors.

<sup>5</sup> In our sample, 43 directors have 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 is not common in each country, we are left with 33 related directors according to this criterion. As a robustness test, we remove all these cases from the sample (see Section 5).



average, especially in Spain (44%) where the Corporate Governance Codes cover inclusion of such directors on the board, but also in other countries that do not have such provisions (Switzerland 35% and UK 35%) (see Table 4). We 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 “same family name” account for around 1.5% of all cases (see Table A.3).

We next explore empirically what role, if any, the presence of minority directors has on the risk-taking of banks.

[Insert Tables 2 to 4]

### 3. Impact of minority directors on risk

#### 3.1. Empirical specification

The econometric specification we use to examine whether the presence of minority directors within bank boards has an impact on banks’ risk-taking 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 bank,  $j$  denotes country,  $t$  the time period, and  $\varepsilon_{i,j,t}$  is the idiosyncratic error term. We consider three measures of risk as the dependent variable: the distance to default ( $DD_{i,j,t}$ ) to proxy for bank insolvency risk using the methodology developed by Merton (1977), the bank stock return volatility ( $\text{Volatility}_{i,j,t}$ ), as well as the ratio of non-performing loans to total loans ( $\text{NPL}_{i,j,t}$ ) as a proxy of the quality of a bank's credit policy.

$\text{Minority}_{i,j,t}$  is the index representing the presence/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, i.e. board size ( $\text{BoardSize}_{i,j,t}$ ), proportion of independent directors ( $\text{Independent}_{i,j,t}$ ), board tier structure ( $\text{OneTierBoard}_{i,j,t}$ ), financial expertise of board members ( $\text{FinancialExpert}_{i,j,t}$ ) and the political connectedness of board members ( $\text{PoliticalConnected}_{i,j,t}$ ). We use the BoardEx classification to identify independent directors, which 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 classify a director as politically connected if she/he holds a political or regulatory position, or has held them in the past, in line with Faccio (2006), Goldman

et al. (2013) and Bergamaschini Morpugo et al. (2017). We also control at the bank-level for bank size, growth of assets, capital structure, loan ratio, deposit ratio, and operating expenses ratio. We furthermore include the following country-level variables (*CountryControls<sub>j,t</sub>*): the growth rate of GDP and an index measuring the level of minority shareholder protection for each country.

All control variables are defined in Table 1 with corresponding descriptive statistics. We examined the correlation between our variables of interest (see Table A.4 in Appendix A) and detected some potential multicollinearity problems, which we resolved by orthogonalizing the variables in question (see Table 1).

### ***3.2. Endogeneity issues and estimation methodology***

One of the main concerns of studies on corporate governance, in general, is the potential problem of endogeneity with key firm variables; this has been raised regarding the board of directors in previous studies such as Hermalin and Weibach (1998, 2003). These endogeneity issues may relate to reverse causation, or the possibility that underlying unobservable factors affect both governance and firm variables, but can also arise from the fact that 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 apply the Blundell and Bond (1998) system GMM estimator to estimate Equation (1), in line with de Andres and Vallelado (2008), Wintoki et al. (2012) and Pathan and Faff (2013). This estimator is appropriate for dynamic panel specifications (Baltagi, 2005), combines the original equation with a transformed one, and is designed to address the potential weak instrument problem. The GMM estimator can exploit the dynamic nature of internal governance mechanism to provide powerful “internal” instruments from within the panel, i.e. past values of governance and other firm variables can serve as instruments for present realizations of governance, eliminating the need for external instruments, which are typically far from straightforward to obtain and validate in this context.

We use the forward orthogonal deviations transformation of the original equation, introduced by Arellano and Bover (1995) and advantageous in unbalanced panels, and apply the two-step estimator including 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 limit the number of instruments by restricting the lag range used to generate them at four, and further collapse the instrument matrix as suggested by Roodman (2009). We apply 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 is verified in the standard way

using the AR(2) test and the Hansen test. The AR(2) test corresponds to the Arellano-Bond test, testing for absence of second-order serial correlation in the first-differenced residuals, while the Hansen test checks for the validity, in the sense of exogeneity, of the entire set of instruments as a group.

### 3.3. Results

The estimation results for Equation (1) using the two-step dynamic panel system GMM estimator are given in Table 5. The model diagnostics reported at the bottom of Table 5 suggest that our estimates are valid, as both the AR(2) test for absence of second-order serial correlation in the first-differenced residuals, and the Hansen J-statistics of over-identifying restrictions, testing 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, validating our choice of a dynamic specification for Equation (1) and the corresponding estimation methodology employed.

The results in Table 5 show that the presence and influence of minority directors within the board (*Minority*) significantly increases the distance to default (i.e. decreases default risk) and decreases the stock return volatility. Having minority directors on the board does, however, not seem to have a significant impact on credit risk as measured by non-performing loans. All our main results are qualitatively consistent with those obtained when applying alternatively the simple fixed-effects estimator with standard errors clustered at the country level (see Table A.5 in the Appendix).

Therefore, we observe that the inclusion of directors that are related to minority shareholders not only does not increase banking risk, but actually helps to reduce it. These results would be consistent with the argument that minority directors are reluctant to make riskier decisions in order to maintain their reputation in the market for directorships (Fama and Jensen, 1983).

Our results thus indicate that the decision of closely-held banks to include minority directors on their boards, to potentially curtail the agency problems arising between minority and controlling shareholders, in fact also contributes to reduce the agency conflict between shareholders and depositors/debtholders/regulators.

Regarding the control variables, our results also interestingly show that the proportion of independent directors (*Independent*) is not associated with a significant impact on bank risk, in line with Minton et al. (2014) and Battaglia and Gallo (2017). The other variables included to control for board structure and characteristics indicate that neither board size, the proportion of directors

with financial expertise, nor the proportion of directors with political connections have an impact on bank risk.

[Insert Table 5]

#### 4. Extensions to analysis

We now examine several factors that could have an impact on the relationship between the presence of minority directors and bank risk found previously. We also explore whether the inclusion of such minority directors in closely-held banks might result in higher market valuation.

##### 4.1. Financial expertise

We first examine whether the significant impact of the presence of minority directors on bank risk found previously depends on a minimum number of minority directors having 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, which might lead to increased risk-taking with the aim of increasing the residual claims of shareholders.

Table 2 shows 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 these minority directors 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 impact, we augment Equation (1) with an interaction term between the index measuring the presence/influence of minority directors ( $Minority_{i,j,t}$ ) and the dummy variable ( $dHighFinExp_{i,j,t}$ ), taking the value of one if at least three minority directors have financial expertise, as follows:

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

Our results are shown in Table 6. The presented Wald tests indicate that the risk-reducing impact of minority directors appears to be significantly driven by those minority directors with financial expertise. This is consistent with the argument that minority directors with financial expertise can

identify risks with excessive downside. This is particularly relevant in light of our previous results of Equation (1) (see Table 5) where the control variable *FinancialExpert* on its own proves not significant.

Overall, our results, therefore, indicate that whether or not the presence of minority directors in closely-held banks is associated with a decrease in risk is conditional on the financial expertise of these minority directors, with direct implications for the interests of debtholders/regulators.

[Insert Table 6]

#### 4.2. Strength of influence

We next explore the potential roles played by a relevant influential board position, and the overall level of shareholder protection, in the reduction of risk we found previously.

We first examine whether the significant relationship observed between risk and the presence of minority directors with financial expertise holds irrespective of their position as chairman or as a member of the audit committee of the board. As chairman of the board, a director can have the casting vote to make a decision, whereas as member of the audit committee a director has the power to exert active monitoring. The proportions of minority directors with financial expertise who are chairman or on the audit committee are around 11% and 17%, respectively. We compute the dummy variables  $dFinExpChairman_{i,j,t}$ ,  $dFinExpNotChairman_{i,j,t}$ ,  $dFinExpAudit_{i,j,t}$  and  $dFinExpNotAudit_{i,j,t}$ , characterizing whether or not at least one minority director with financial expertise has a position of chairman or is in the audit committee on the board, respectively. We first augment Equation (1) with the interaction terms between the index  $Minority_{ij}$  and the dummy variables  $dFinExpChairman_{i,j,t}$  and  $dFinExpNotChairman_{i,j,t}$ , and then repeat this exercise for the two dummy variables  $dFinExpAudit_{i,j,t}$  and  $dFinExpNotAudit_{i,j,t}$ . Results are displayed in Tables 7 and 8, respectively, with the associated Wald tests reported. We observe that our previous results of minority directors with financial expertise being linked to lower risk seem to hold only when at least one of these minority directors also holds the position of chairman or is in the audit committee.

Next, we examine whether the level of shareholder protection affects the impact of minority directors with financial expertise on risk. For this, we augment Equation (2) with triple interaction terms between the index  $Minority_{ij}$ , the dummy variable  $dHighFinExp_{i,j,t}$  characterizing if at least three minority directors have financial expertise, and a dummy variable taking the value of one if the bank is in a country with relatively high levels of shareholder protection ( $dHighLegal_{j,t}$ ). 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 majority shareholders in the corporate decision-making process, including the voting process. The rule of law index reflects 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, with a higher index indicating a higher level of shareholder protection. The dummy variable  $dHighLegal_{j,t}$  takes the value of 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 9, with the associated Wald tests reported. The results show that the presence of minority directors with financial expertise is linked to lower risk irrespective of the level of shareholder protection.

Our results overall show that the presence of minority directors can lead to lower risk if they have financial expertise and at least one of them has a decisive position on the board, but irrespective of the level of shareholder protection in place.

[Insert Tables 7 to 9]

### **4.3. Political connectedness**

Table 1 shows that around 20% of minority directors are politically connected according to our definition (see Section 3.1). We, therefore, investigate if the positive relationship we found previously between the presence of minority directors and bank risk could be explained by their political connectedness.

For this, we compute the dummy variable  $dPoliticalConnected_{i,j,t}$  taking the value of one if at least one minority director is politically connected. We then augment Equation (1) with an interaction term between ( $Minority_{i,j,t}$ ) and the dummy variable  $dPoliticalConnected_{i,j,t}$ . Results in Table 10 show that the observed decrease in risk holds independently of the political connectedness of minority directors. Our results do not, therefore, support the argument that the presence of politically connected directors on the board has a negative impact on the quality of loans granted by the bank. It is also important to note that only a small number of directors have both financial expertise and are politically connected, showing that our previous results are robust.

[Insert Table 10]

#### **4.4. Global financial crisis**

We further examine if the presence of minority directors may have played a specific role during the global financial crisis. Given our main results obtained so far, it is particularly interesting to explore whether the risk-reducing impact of minority directors found overall applies equally to both non-crisis as well as crisis periods. For this investigation, we augment Equation (1) with an interaction term between the index  $Minority_{i,j,t}$  and the dummy variable  $dCrisis_t$  that takes the value of one during the main crisis years covered (2007-2009).

Results are reported in Table 11. We observe that the presence/influence of minority directors is only associated with an increase in the distance to default and a reduction of volatility in normal times, while it has no significant impact during the crisis period. We also find that the presence of minority directors on bank boards has no significant impact on the level of non-performing loans throughout. Our results thus provide evidence that the inclusion of minority directors on the board of closely-held banks cannot be considered as a contributing factor to the last global financial crisis. On the contrary, they appear to be an effective way to increase financial stability in normal times, although clearly, but perhaps not surprisingly, they were not able to have a significant risk-reducing impact during the financial crisis per se. This is in contrast to the findings of Bertratti and Stulz (2012) that banks with more shareholder-friendly boards performed relatively worse during the crisis.

[Insert Table 11]

#### **4.5. Minority directors and market valuation**

We also examine whether the inclusion of minority directors on the board of closely-held banks might lead to an increase in their market value. The ability of the controlling shareholder to divert corporate resources from minority shareholders can reduce the market value of firms, especially in countries with weak legal shareholder protection. Such a value discount has been documented by Claessens et al. (2002), La Porta et al. (2002) and Durnev and Kim (2005). By including minority directors on the board, the controlling shareholder can reduce their ability to extract private benefits. While this obviously incurs private costs, the market may, in fact, reward firms that adopt such governance structures.

To examine this issue, we consider Tobin's Q as a measure of market valuation ( $Tobin\_Q_{i,j,t}$ ), computed as the book value of assets minus the book value of equity plus the market value of equity, 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 ( $SMR_{i,j,t}$ ) using

monthly data, i.e. for each month we compute the shareholder market return adjusted for dividend payments. We then calculate the average value of these monthly SMRs over each year, and finally annualize. The estimation results using the two-step dynamic panel system GMM estimator are reported in Table 12.

Our results show that the presence and influence of minority directors on the board has a significant and positive impact on Tobin's Q and SMR. This result indicates that, in closely-held banks, the market value can, in fact, be increased by appointing directors that are related to minority shareholders. 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. The inclusion of directors that are related to minority shareholders appears, therefore, to be an effective approach in closely-held banks to curtail the agency problems arising between minority and controlling shareholders.

Overall, these results provide evidence that in closely-held banks, the documented value discount can be offset, at least in part, by appointing directors that are related to minority shareholders. These results could explain why a large number of closely-held European banks have at least one minority director on their board.

[Insert Table 12]

## 5. Robustness checks

We subject our results to an extensive range of robustness checks related to alternative empirical methodologies, sample issues, and the criteria used to identify controlling shareholders and related directors.

### *Alternative empirical methodologies*

As we discussed above, the GMM estimator is widely considered appropriate to solve the potential endogeneity problem between corporate governance and firm risk. Nevertheless, it is possible that the presence of minority directors is not randomly allocated across banks. We therefore also follow Drucker and Puri (2005) and use propensity-score matching techniques to address potential endogeneity problems. We first compute each observation's propensity score; the propensity score is the probability that a bank has a minority director on its board, given the remaining characteristics are controlled in the model. We use the same board-, bank- and country-level control variables as in Equation (1). Then, each bank with at least one minority director on its board (treated group) is matched with a bank that does not have minority directors but has the closest propensity score to the treated firm (control group). We perform nearest-neighbor matching



by pairing each treated bank with the three closest banks in the control group.<sup>6</sup> Table A.6 reports the results. Our propensity score matching analysis confirms that the level of risk is lower (higher distance to default and lower volatility) in the group of banks having minority directors on their board. We also observe that, again, there is no significant difference in the level of non-performing loans between the treated and the control groups. These results, therefore, confirm those we found previously with the GMM methodology.

#### *Criteria to identify controlling shareholders and related directors*

We alternatively use the control threshold of 10% to identify controlling and minority shareholders. This alternative minimum control threshold 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.7).

We further compute two alternative indices of relatedness of minority directors. Firstly, we exclude the criterion of a director being a minority shareholder in order to check if our index  $Minority_{i,j,t}$  is not a proxy for 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). Secondly, we had considered “having the same family name with 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. We re-run our regressions with these two alternative indices and find that our main conclusions are unchanged (see Panels B and C in Table A.7).

We lastly re-estimate our regressions with an alternative measure of relatedness of board directors to minority shareholders, defined as the percentage of minority directors on the board; results are again unchanged (see Panel D in Table A.7).

#### *Sub-sample analysis*

We rerun our regressions on different sub-samples 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 (with

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<sup>6</sup> We alternatively use the radius methodology and the kernel or caliper approach, and similar results are obtained.

however no obligation for companies to comply or explain deviations from this). 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 in this country. Even excluding these banks, our conclusions from previous sections prevail (see Panels A and B in Table A.8).

## **6. Conclusion**

Using a panel of European banks with a controlling shareholder over the period 2003-2017, we examined whether the decision of closely-held banks to include minority directors on their board, i.e. directors appointed by or otherwise related to minority shareholders, potentially taken in order to reduce the agency conflict between minority and controlling shareholders, might not, in fact, lead to an increase in bank risk-taking, intensifying the further agency conflict arising for banks between shareholders and debtholders.

Reassuringly, we find that the presence and influence of minority directors on bank boards is actually associated with generally lower risk (apart from credit risk which remains unaffected throughout). Our results are consistent with the argument that minority directors are reluctant to support riskier decisions in order to maintain their reputation in the market for directorships. We also pursue a variety of ways in which the presence of minority directors might affect banking risk. We first examined the role of minority directors having financial expertise, as well as whether or not they require more concrete, formal means to potentially influence board decisions. We find that risk reduction is only achieved when minority directors have financial expertise and when at least one of them has either the position of chairman or is on the audit committee. These results are consistent with the argument that minority directors with financial expertise are less willing to let their bank engage in excessive risk-taking activities, due to their familiarity with and understanding of complex financial matters. We also find that while the presence of minority directors is associated with lower risk in normal times, their presence did not lead to similar moderation of bank risk during the last financial crisis. Our results also show that the risk reduction observed when minority directors with financial expertise are present on bank boards holds irrespective of the level of shareholder protection and their political connections.

Our results further demonstrate that the presence of minority directors has a positive and significant impact on both market valuation, as measured by Tobin's Q, and SMR. Our results thus might suggest that the inclusion of minority directors on the board can be a way for banks with controlling shareholders to credibly commit that they will not expropriate minority shareholders. In our context of closely-held banks, the inclusion of minority directors could, therefore, be an

effective way to achieve the complex objective of not only enhancing the welfare of shareholders, but also of depositors, debtholders and regulators.

Overall, 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. Some regulators have suggested amending Codes of Corporate Governance with the recommendation that at least one director should be nominated by banking regulators to reduce the agency conflict between shareholders and depositors/debtholders/regulators (Acharya et al., 2009). However, such a recommendation might be considered unacceptable for many bank insiders and may thus not be widely applied. Our work might suggest an alternative solution: recommending a sufficient presence of minority directors could increase bank board effectiveness for closely-held banks, in particular if they have financial expertise and are represented in relevant position on the board. Firstly, this 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. Secondly, it could also allow controlling shareholders to credibly commit that they will not divert corporate resources, leading to higher market valuation. As a consequence, it seems advisable that Corporate Governance Codes should recommend allowing minority directors to be present in bank boards. Of course, to a controlling shareholder, the cost of including minority directors is the potential reduction in perquisites linked to being in a controlling position, which 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

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 non-performing loans over total loans (%)	Bloomberg	5.09	2.93	6.95	0.0005	37
<i>Dependent variables, measures of market valuation</i>							
Tobin_Q	Book value of assets minus the book value of equity plus the market value of equity, 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
<i>Index of the presence/influence of minority directors</i>							
Minority	Index of the relatedness of board directors to minority shareholders having less than 5% of control rights	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 taking the value of 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
PoliticalConnected	Proportion of directors who are political connected on the board (%)	BoardEx	19.61	16.67	15.90	0	77.77
<i>Bank-level control variables</i>							
Size	Natural logarithm of Total Assets (orthogonalized on Capital)	Bloomberg	11.37	11.31	1.97	5.36	14.74
Growth	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
Operating	Total operating expenses divided by total operating income (%)	Bloomberg	3.52	2.37	7.49	-3.64	15.06

*Country-level control variables*

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 range 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

*Further variables*

dHighFinExp	Dummy variable taking the value of one if at least three of the minority directors are financial experts	BoardEx	0.98	1	0.12	0	1
dFinExpChairman	Dummy variable taking the value of one if at least one of the minority directors is financial expert and is the chairman	BoardEx	0.40	0	0.49	0	1
dFinExpNotChairman	Dummy variable taking the value of one if at least one of the minority directors is financial expert and is not the chairman	BoardEx	0.32	0	0.47	0	1
dFinExpAudit	Dummy variable taking the value of one if at least one of the minority directors is financial expert and is in the audit committee	BoardEx	0.21	0	0.41	0	1
dFinExpNotAudit	Dummy variable taking the value of one if at least one of the minority directors who is financial expert and is not in the audit committee	BoardEx	0.19	0	0.38	0	1
dHighLegal	Dummy variable taking the value of 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
dCrisis	Dummy variable taking the value of one for the period 2007-2009		0.12	0	0.33	0	1
dPoliticalConnected	Dummy variable taking the value of one if at least one of the minority directors is politically connected	BoardEx	0.43	0	0.49	0	1

This Table defines the variables and reports summary statistics for the full sample on average over the period of analysis 2003-2017.



**Table 2.**  
Score of relatedness of a minority director

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

This table explains the way the total score of relatedness of a director is calculated. 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; (2) if the relationship is in the present.

**Table 3.**  
Descriptive statistics on minority directors, per year

	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
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

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.

**Table 4.**  
Descriptive statistics on minority directors, per country

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
<b>Average</b>	<b>66.27</b>	<b>14.63</b>	<b>22.92</b>

This table reports the proportion of banks having at least one minority director, the average number of directors and the proportion of minority directors on boards for each country over the period 2003-2017.

**Table 5.**

Impact of the presence/influence of minority directors on bank risk (Equation (1))

	DD	Volatility	NPL
	(1)	(2)	(3)
Minority	0.271*** (3.17)	-0.0168** (-2.39)	-0.000313 (-0.35)
Lag. dependent	0.862*** (6.32)	0.897*** (7.46)	0.937*** (13.30)
BoardSize	0.216 (0.17)	0.00346 (0.04)	-0.00221 (-0.09)
Independent	0.0108 (0.59)	0.00070 (0.41)	0.00013 (0.57)
OneTierBoard	2.245 (1.55)	-0.183 (-1.36)	-0.0219 (-0.80)
FinancialExpert	-0.0333 (-0.72)	-0.0069 (-1.22)	-0.0078 (-0.01)
PoliticalConnected	0.605* (1.74)	-0.0215 (-0.73)	-0.00378 (-0.58)
Size	0.0897 (0.24)	-0.0245 (-0.81)	0.00019 (0.03)
Growth	0.999 (1.12)	-0.130 (-1.61)	-0.00767 (-0.48)
Capital	30.78** (2.11)	-3.025** (-2.09)	-0.0817 (-0.28)
Loan	1.285 (0.49)	-0.352 (-1.48)	-0.0396 (-0.71)
Legal	-0.0379 (-0.22)	0.009 (0.58)	-0.00089 (-0.37)
GDP	0.0507 (1.18)	-0.00736* (-1.71)	-0.00311*** (-3.72)
Deposit	-0.936 (-0.39)	-0.175 (-1.12)	0.0142 (0.40)
Operating	0.0363 (1.46)	0.00335 (0.74)	-0.00014 (-0.28)
Constant	-7.052 (-0.80)	0.919 (1.56)	0.0467 (0.31)
Observations	555	597	505
AR(2) test (p-value)	(0.23)	(0.46)	(0.61)
Hansen test (p-value)	(0.15)	(0.27)	(0.67)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/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, with \*, \*\*, and \*\*\* denoting 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.

**Table 6.**

The role of minority directors with financial expertise (Equation (2))

	DD (1)	Volatility (2)	NPL (3)
Minority ( $\beta_1$ )	-0.233 (-0.44)	-0.129 (-0.94)	0.00306 (0.28)
Minority*dHighFinExp ( $\beta_2$ )	0.475 (0.89)	0.108 (0.79)	-0.00329 (-0.30)
Control variables	Yes	Yes	Yes
<u>Wald test</u>			
<i>High proportion of financial experts</i> $\beta_1 + \beta_2 = 0$	0.242*** (0.00)	-0.021*** (0.00)	-0.0002 (0.73)
Observations	555	597	505
AR(2) test (p-value)	(0.33)	(0.62)	(0.62)
Hansen test of over-identification (p-value)	(0.18)	(0.23)	(0.44)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*) when a large number of minority directors are financial experts, and control variables. The dummy variable *dHighFinExp* takes the value of one if at least three of the minority directors are financial experts, which is roughly equivalent to at least 75% of minority directors on a board having financial expertise. 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, with \*, \*\*, and \*\*\* denoting 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.

**Table 7.**

The role of minority directors with financial expertise and a chairman position

	DD (1)	Volatility (2)	NPL (3)
Minority ( $\beta_1$ )	0.164 (0.62)	-0.0236 (-0.97)	0.00395 (1.35)
Minority*dFinExpChairman ( $\beta_2$ )	0.0736 (0.24)	0.00108 (0.04)	-0.00528* (-1.71)
Minority*dFinExpNotChairman ( $\beta_3$ )	0.000843 (0.00)	0.0155 (0.63)	-0.00241 (-0.53)
Control variables	Yes	Yes	Yes
<b>Wald tests</b>			
<i>Financial expertise and chairman position</i> $\beta_1 + \beta_2 = 0$	0.237** (0.04)	-0.022** (0.03)	-0.001 (0.31)
<i>Financial expertise without chairman position</i> $\beta_1 + \beta_3 = 0$	0.165 (0.26)	-0.008 (0.59)	0.001 (0.46)
Observations	555	597	505
AR(2) test (p-value)	(0.47)	(0.34)	(0.49)
Hansen test of over-identification (p-value)	(0.19)	(0.33)	(0.80)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*) when minority directors are financial experts with a chairman position, and control variables. The dummy variable *dFinExpChairman* takes the value of one if one of the minority directors is a financial expert and is the chairman. The dummy variable *dFinExpNotChairman* takes the value of one if at least one of the minority directors is a financial expert but is not 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, with \*, \*\*, and \*\*\* denoting 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.

**Table 8.**

The role of minority directors with financial expertise and a position in the audit committee

	DD (1)	Volatility (2)	NPL (3)
Minority ( $\beta_1$ )	0.214 (0.82)	-0.0260 (-1.18)	0.00296 (1.06)
Minority*dFinExpAudit ( $\beta_2$ )	-0.0465 (-0.16)	-0.0216 (-0.75)	-0.00437 (-1.54)
Minority*dFinExpNotAudit ( $\beta_3$ )	0.133 (0.35)	0.0442 (1.58)	-0.00111 (-0.25)
Control variables	Yes	Yes	Yes
<u>Wald tests</u>			
<i>Financial expertise and in the audit committee</i> $\beta_1 + \beta_2 = 0$	0.168* (0.09)	-0.047*** (0.00)	-0.001 (0.16)
<i>Financial expertise and not in the audit committee</i> $\beta_1 + \beta_3 = 0$	0.347* (0.09)	0.018 (0.55)	0.001 (0.33)
Observations	555	597	505
AR(2) test (p-value)	(0.98)	(0.49)	(0.20)
Hansen test of over-identification (p-value)	(0.19)	(0.11)	(0.85)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*) when minority directors are financial experts and are in the audit committee, and control variables. The dummy variable *dFinExpAudit* takes the value of one if at least one of the minority directors is a financial expert and is in the audit committee. The dummy variable *dFinExpNotAudit* takes the value of one if at least one of the minority directors is a financial expert but is not in 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, with \*, \*\*, and \*\*\* denoting 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.

**Table 9.**

The role of minority directors with financial expertise dependant on the level of shareholder protection

	DD (1)	Volatility (2)	NPL (3)
Minority ( $\beta_1$ )	0.00660 (0.01)	-0.322* (-1.77)	-0.00414 (-0.49)
Minority*dHighFinExp ( $\beta_2$ )	0.295 (0.50)	0.284 (1.58)	0.00233 (0.27)
Minority*dHighLegal ( $\beta_3$ )	0.365 (0.10)	0.261 (0.64)	-0.0170 (-0.33)
Minority*dHighFinExp* dHighLegal ( $\beta_4$ )	-0.392 (-0.11)	-0.237 (-0.58)	0.0192 (0.37)
Control variables	Yes	Yes	Yes
<u>Wald tests</u>			
<i>Financial expertise and low levels of shareholder protection, <math>\beta_1 + \beta_2 = 0</math></i>	0.301*** (0.00)	-0.038*** (0.00)	-0.001 (0.22)
<i>No financial expertise and high levels of shareholder protection, <math>\beta_1 + \beta_3 = 0</math></i>	0.372 (0.91)	-0.061 (0.83)	-0.021 (0.63)
<i>Financial expertise and high levels of shareholder protection, <math>\beta_1 + \beta_2 + \beta_3 + \beta_4 = 0</math></i>	0.275** (0.01)	-0.013* (0.06)	0.0004 (0.70)
Observations	555	597	505
AR(2) test (p-value)	(0.22)	(0.79)	(0.28)
Hansen test of over-identification (p-value)	(0.58)	(0.17)	(0.33)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*) when minority directors are financial experts in an environment with strong levels of shareholder protection. The dummy variable *dHighFinExp* takes the value of one if at least three of the minority directors are financial experts, which is roughly equivalent to at least 75% of minority directors on a board having financial expertise. The dummy variable *dHighLegal* takes the value of 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, with \*, \*\*, and \*\*\* denoting 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.

**Table 10.**

The role of minority directors with political connections

	DD (1)	Volatility (2)	NPL (3)
Minority ( $\beta_1$ )	0.383** (2.30)	-0.0227*** (-3.06)	-0.000711 (-0.67)
Minority*dPoliticalConnected ( $\beta_2$ )	-0.285* (-1.76)	0.00572 (0.39)	-0.000514 (-0.37)
Control variables	Yes	Yes	Yes
Observations	555	597	505
AR(2) test (p-value)	(0.50)	(0.51)	(0.51)
Hansen test of over-identification (p-value)	(0.14)	(0.18)	(0.32)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*) when minority directors are politically connected, and control variables. The dummy variable *dPoliticalConnected* takes the value of 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, with \*, \*\*, and \*\*\* denoting 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.

**Table 11.**

The role of minority directors in crisis and non-crisis periods

	DD (1)	Volatility (2)	NPL (3)
Minority ( $\beta_1$ )	0.300*** (3.50)	-0.0173*** (-2.73)	-0.000431 (-1.02)
Minority*dCrisis ( $\beta_2$ )	-0.306*** (-3.72)	0.0123* (1.71)	0.0000204 (0.05)
Control variables	Yes	Yes	Yes
<u>Wald test</u>			
<i>Crisis period</i>	-0.006 (0.02)	-0.005 (0.50)	-0.00041 (0.68)
$\beta_1 + \beta_2 = 0$			
Observations	555	597	505
AR(2) test (p-value)	(0.13)	(0.44)	(0.55)
Hansen test of over-identification (p-value)	(0.12)	(0.16)	(0.57)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*) during non-crisis and crisis periods (2007-2009). The dummy variable *dCrisis* takes the value of one for the period 2007-2009. 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, with \*, \*\*, and \*\*\* denoting 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.



**Table 12.**

Impact of the presence/influence of minority directors on market valuation

	Tobin_Q	SMR
	(1)	(2)
Minority	0.00248** (2.01)	0.0697*** (2.97)
Lag. dependent	0.861*** (7.60)	-0.0835 (-0.39)
BoardSize	-0.0117 (-0.56)	0.451 (0.86)
Independent	-0.00068** (-2.17)	-0.00840 (-1.10)
OneTierBoard	-0.00085 (-0.06)	0.157 (0.73)
FinancialExpert	0.00779 (1.18)	0.0209 (1.06)
PoliticalConnected	-0.00434 (-0.74)	-0.171 (-1.52)
Size	0.00133 (0.17)	-0.0585 (-0.61)
Growth	-0.0464** (-2.37)	0.368 (1.24)
Capital	-0.421*** (-2.74)	6.173 (0.94)
Loan	0.0543 (1.11)	0.634 (0.96)
Legal	-0.000097 (-0.02)	-0.839** (-2.53)
GDP	-0.00137 (-1.28)	0.0402 (0.77)
Volatility	-0.0358** (-2.36)	-0.0498* (-1.67)
Constant	0.197 (1.58)	-0.720 (-0.34)
Observations	597	600
AR(2) test (p-value)	(0.74)	(0.19)
Hansen test (p-value)	(0.93)	(0.14)

This table reports two-step dynamic panel system GMM estimations of market valuation measures (Tobin's Q *Tobin\_Q*, and shareholder market return *SMR*) on the index measuring the presence/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, with \*, \*\*, and \*\*\* denoting 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.

## Appendix A

**Table A.1**  
Distribution of banks by country in 2017

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
<b>Total</b>	<b>149</b>	<b>103</b>	<b>80.81</b>

This table reports, for the year 2017, 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.

**Table A.2**

Proportion of banks controlled by different controlling shareholder types (in percent)

	2003	2005	2007	2009	2011	2013	2015	2017
Non-financial 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/Public authority	0	0	5.80	9.72	10.81	10.47	9.90	10.68

This table displays the proportion of banks with the controlling shareholder being a non-financial company, a financial company, a bank, a foundation/research institute, an individual/family or a state/public authority.

**Table A.3**

Proportion of directors related to minority shareholders, per criteria (in percent)

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

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.

**Table A.4**  
Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1.DD	1																
2.Volatility	-0.808***	1															
3.NPL	-0.392***	0.502***	1														
4.Minority	-0.096*	0.081	0.038	1													
5.BoardSize	-0.013	0.015	0.040	-0.120**	1												
6.OneTierBoard	0.138**	-0.145**	-0.135**	-0.216***	0.140**	1											
7.Independent	-0.085	0.007	0.032	0.338***	-0.286***	-0.123**	1										
8.PoliticalConnected	-0.003	-0.019	-0.092*	0.208***	-0.052	-0.221***	0.264***	1									
9.FinancialExpert	0.043	-0.070	-0.011	0.193***	-0.022	-0.163***	0.175***	0.154	1								
10.Size	-0.290***	0.200***	0.008	0.288***	0.327***	-0.214***	0.155***	0.388***	0.351***	1							
11.Growth	0.211***	-0.214***	-0.128**	-0.031	0.066	-0.118*	-0.059	-0.011	0.081	-0.0008	1						
12.Capital	0.233***	-0.169***	0.203***	-0.078	-0.140**	-0.027	0.033	-0.103*	-0.112*	-0.531***	0.029	1					
13.Loan	0.079	0.006	0.317***	-0.048	-0.204***	0.077	0.107*	-0.228***	-0.193***	-0.411***	-0.025	0.382***	1				
14.Deposit	0.137**	-0.139**	0.126**	-0.002	-0.266***	0.158***	0.099*	0.008	-0.045	-0.467***	0.038	0.313***	0.279***	1			
15.Operating	-0.040	-0.015	-0.030	-0.011	0.107*	0.076	-0.026	0.022	0.020	0.054	-0.052	-0.101*	-0.147**	0.032	1		
16.Legal	0.176***	-0.208***	-0.465***	0.113*	-0.262***	0.123**	0.155***	0.427***	0.132**	0.139**	-0.007	-0.171***	-0.198***	-0.084	0.027	1	
17.GDP	0.384***	-0.484***	-0.198***	-0.090	-0.101*	0.011	0.080	0.076	0.092*	-0.004	0.165***	0.068	-0.077	0.051	-0.017	0.297***	1

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

**Table A.5**

Impact of the presence/influence of minority directors on bank risk and performance (Equation (1), Fixed effects regressions)

	DD	Volatility	NPL
	(1)	(2)	(3)
Minority	0.0911** (2.70)	-0.00858** (-2.28)	-0.000004 (-0.02)
Lag. dependent	0.501*** (5.38)	0.794*** (6.79)	0.932*** (46.39)
BoardSize	0.251 (1.10)	-0.0814 (-1.35)	-0.00109 (-0.40)
Independent	0.00470 (0.91)	-0.000827** (-2.17)	-0.000247*** (-3.39)
OneTierBoard	-0.994** (-2.53)	0.0531 (1.40)	-0.0103* (-1.80)
FinancialExpert	0.286** (2.38)	-0.0302* (-2.10)	0.00120 (1.20)
PoliticalConnected	0.0157 (1.68)	-0.00513*** (-3.80)	-0.000325** (-2.65)
Size	-0.631* (-2.12)	0.0283 (0.67)	0.0124*** (5.62)
Growth	1.365*** (3.54)	-0.190** (-2.44)	-0.0108 (-1.63)
Capital	2.205 (0.42)	-0.478 (-0.92)	-0.0982 (-0.89)
Loan	-1.174 (-1.48)	0.139 (1.38)	0.0271* (1.95)
Legal	-0.353 (-1.01)	0.0336 (0.74)	0.000242 (0.06)
GDP	0.109** (2.84)	-0.00707 (-1.40)	-0.00301*** (-5.02)
Deposit	0.976 (1.06)	-0.467** (-2.20)	-0.0359 (-1.45)
Operating	0.00275 (0.55)	-0.000279 (-0.21)	0.0000778 (0.37)
Constant	9.086** (2.18)	0.142 (0.22)	-0.116** (-2.52)
Observations	555	597	505
Cluster level	Country	Country	Country

This table presents the regression results of the impact of the presence of minority directors on bank risk (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) using fixed effects with standard errors clustered at the country level. The index *Minority* measures the presence/influence of minority directors. The z-statistics are in parentheses, with \*, \*\*, and \*\*\* denoting significance at 10%, 5% and 1% levels. All variables are as defined in Table 1.

**Table A.6**

Robustness check (1): Propensity Score Matching analysis

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

This table presents results for the propensity score matching analysis for the risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*). 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.

**Table A.7**

Robustness check (2): Alternative criteria to identify controlling shareholders and related directors

	Panel A: Control threshold of 10%			Panel B: Exclusion of minority directors who are minority shareholders		
	DD (1)	Volatility (2)	NPL (3)	DD (4)	Volatility (5)	NPL (6)
Minority	0.254*** (2.70)	-0.0172** (-2.49)	-0.000155 (-0.24)	0.256*** (2.92)	-0.0155** (-2.26)	-0.000128 (-0.27)
Lag. dependent	0.838*** (6.48)	0.786*** (7.50)	0.911*** (14.57)	0.902*** (5.96)	0.911*** (7.59)	0.920*** (14.43)
BoardSize	0.0814 (0.06)	0.0559 (0.45)	0.00584 (0.45)	0.257 (0.21)	-0.00768 (-0.09)	0.00154 (0.14)
Independent	0.0168 (0.80)	-0.000807 (-0.01)	0.000722 (0.61)	0.0109 (0.64)	0.000568 (0.34)	0.0000687 (0.44)
OneTierBoard	2.049 (1.61)	-0.0201 (-0.17)	-0.0172 (-0.94)	2.088 (1.43)	-0.150 (-1.12)	-0.0145 (-0.89)
FinancialExpert	-0.0136 (-0.26)	-0.00595 (-1.13)	-0.000294 (-0.79)	-0.0418 (-0.89)	-0.00673 (-1.17)	-0.0000646 (-0.13)
PoliticalConnected	0.673** (2.03)	-0.00507 (-0.17)	0.00170 (0.45)	0.657* (1.77)	-0.0224 (-0.74)	-0.00173 (-0.35)
Size	0.0255 (0.06)	0.000689 (0.02)	-0.000146 (-0.05)	0.182 (0.48)	-0.0238 (-0.75)	-0.000411 (-0.09)
Growth	0.474 (0.54)	-0.172** (-2.40)	-0.0144 (-1.23)	0.982 (1.03)	-0.122 (-1.50)	-0.00960 (-0.96)
Capital	21.50 (1.56)	-1.877 (-1.49)	-0.0954 (-0.59)	30.62** (2.06)	-2.993** (-2.14)	-0.0688 (-0.35)
Loan	-0.260 (-0.15)	-0.135 (-0.58)	0.00527 (0.15)	1.553 (0.53)	-0.330 (-1.40)	0.00432 (0.12)
Deposit	0.303 (0.12)	-0.133 (-0.59)	0.00104 (0.04)	0.0236 (0.01)	-0.212 (-1.31)	-0.00107 (-0.04)
Operating	0.0241 (0.87)	0.000275 (0.08)	-0.0000863 (-0.25)	0.0374 (1.35)	0.00422 (0.91)	0.0000250 (0.07)
Legal	-0.112 (-0.67)	0.0294 (1.41)	-0.000361 (-0.23)	-0.000197 (-0.00)	0.00701 (0.46)	-0.000358 (-0.24)
GDP	0.0706 (1.29)	-0.0121** (-2.23)	-0.00209*** (-4.48)	0.0344 (0.85)	-0.00622 (-1.46)	-0.00192*** (-3.92)
Constant	-4.861 (-0.53)	0.164 (0.22)	-0.00371 (-0.05)	-9.111 (-0.96)	0.936 (1.53)	0.0159 (0.21)
Observations	475	510	425	555	597	505
AR(2) test (p-value)	(0.34)	(0.13)	(0.58)	(0.25)	(0.45)	(0.77)
Hansen test of over-identification (p-value)	(0.33)	(0.39)	(0.30)	(0.14)	(0.31)	(0.40)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/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. In Panel B, we exclude the criterion of a director being a minority shareholder to be classified as related to 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, with \*, \*\*, and \*\*\* denoting 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 of the paper.



**Table A.7 (cont.).**

Robustness check (2): Alternative criteria to identify controlling shareholders and related directors

	Panel C: Exclusion of minority directors with the same family name as minority shareholders			Panel D: Percentage of minority directors		
	DD (1)	Volatility (2)	NPL (3)	DD (4)	Volatility (5)	NPL (6)
Minority	0.278*** (3.11)	-0.0172** (-2.43)	-0.000219 (-0.47)	2.287*** (3.47)	-0.130** (-2.03)	-0.00172 (-0.23)
Lag. dependent	0.864*** (6.36)	0.906*** (7.37)	0.920*** (15.44)	0.866*** (6.56)	0.894*** (7.92)	0.937*** (12.57)
BoardSize	0.113 (0.10)	-0.00511 (-0.06)	0.00250 (0.23)	0.287 (0.24)	-0.00227 (-0.08)	0.00250 (0.23)
Independent	0.0105 (0.58)	0.000664 (0.38)	0.0000722 (0.49)	0.0115 (0.58)	0.000294 (0.20)	0.000133 (0.59)
OneTierBoard	2.220 (1.57)	-0.177 (-1.35)	-0.0150 (-0.93)	2.148 (1.63)	-0.0171 (-0.58)	-0.0150 (-0.93)
FinancialExpert	-0.0347 (-0.78)	-0.00658 (-1.14)	-0.000140 (-0.30)	-0.0388 (-0.86)	-0.00695 (-1.21)	0.000136 (0.19)
PoliticalConnected	0.612* (1.78)	-0.0222 (-0.75)	-0.00108 (-0.23)	0.697** (2.26)	-0.0176 (-0.57)	-0.00377 (-0.57)
Size	0.0899 (0.25)	-0.0237 (-0.78)	-0.0000113 (-0.00)	0.239 (0.70)	-0.0267 (-0.90)	-0.000734 (-0.11)
Growth	0.952 (1.02)	-0.123 (-1.49)	-0.00838 (-0.94)	1.073 (1.17)	-0.129* (-1.80)	-0.00577 (-0.33)
Capital	30.75** (2.17)	-3.137** (-2.14)	-0.0461 (-0.24)	28.99** (2.39)	-2.796** (-2.03)	-0.0581 (-0.19)
Loan	1.248 (0.47)	-0.337 (-1.40)	0.00384 (0.11)	1.617 (0.62)	-0.309 (-1.34)	-0.0404 (-0.72)
Deposit	-1.137 (-0.47)	-0.165 (-1.03)	-0.0241 (-0.00)	-0.442 (-0.19)	-0.192 (-0.95)	0.00655 (0.17)
Operating	0.0381 (1.60)	0.00319 (0.69)	0.00185 (0.06)	0.0215 (0.73)	0.00377 (0.88)	-0.000120 (-0.26)
Legal	-0.0442 (-0.27)	0.00790 (0.51)	-0.000234 (-0.16)	-0.0146 (-0.09)	0.0101 (0.65)	-0.00117 (-0.43)
GDP	0.0516 (1.19)	-0.00695 (-1.65)	-0.00198*** (-4.45)	0.0439 (1.15)	-0.00675 (-1.52)	-0.00315*** (-3.89)
Constant	-6.670 (-0.77)	0.932 (1.56)	0.00531 (0.08)	-9.306 (-1.17)	0.822 (1.34)	0.0587 (0.36)
Observations	555	597	505	555	597	505
AR(2) test (p-value)	(0.21)	(0.45)	(0.76)	(0.24)	(0.45)	(0.62)
Hansen test of over-identification (p-value)	(0.13)	(0.27)	(0.41)	(0.18)	(0.25)	(0.67)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*), and control variables. In Panel C, we exclude minority directors having the same family name as minority shareholders. In Panel D, the dependent variable is the percentage of minority directors 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, with \*, \*\*, and \*\*\* denoting 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 of the paper.

**Table A.8**

Robustness check (3): Sub-sample analysis

	Panel A: Exclusion of Italy and Spain			Panel B: Exclusion of Switzerland		
	DD (1)	Volatility (2)	NPL (3)	DD (4)	Volatility (5)	NPL (6)
Minority	0.338*** (3.92)	-0.0165** (-2.11)	0.000265 (0.48)	0.182*** (2.63)	-0.0123* (-1.86)	-0.000313 (-0.35)
Lag. dependent	0.866*** (7.26)	0.890** (6.82)	0.881*** (10.35)	0.784*** (6.08)	0.894*** (6.44)	0.937*** (13.30)
BoardSize	0.664 (0.81)	-0.0290 (-0.36)	0.000599 (0.01)	0.579 (0.68)	0.0437 (0.52)	-0.00221 (-0.09)
Independent	0.000461 (0.02)	0.000357 (0.13)	0.000976 (0.66)	0.0121 (0.62)	-0.000378 (-0.13)	0.000130 (0.57)
OneTierBoard	1.456 (0.90)	-0.141** (-2.08)	-0.0220 (-1.41)	0.795 (0.39)	-0.0998 (-1.23)	-0.0219 (-0.80)
FinancialExpert	0.00411 (0.09)	-0.00629 (-0.88)	-0.000203 (-0.40)	-0.0730* (-1.89)	0.00138 (0.34)	-0.0000779 (-0.01)
PoliticalConnected	0.281 (0.63)	-0.0170 (-0.42)	-0.00247 (-0.52)	0.858** (2.47)	-0.00908 (-0.27)	-0.00378 (-0.58)
Size	-0.0409 (-0.14)	-0.0151 (-0.43)	-0.00230 (-0.59)	-0.0922 (-0.32)	-0.0379 (-0.76)	0.000192 (0.03)
Growth	0.216 (0.24)	-0.135* (-1.84)	-0.0188 (-1.62)	0.906 (0.88)	-0.155** (-1.99)	-0.00767 (-0.48)
Capital	27.72*** (2.93)	-2.649* (-1.70)	-0.216 (-0.74)	26.48* (1.92)	-3.701** (-2.00)	-0.0817 (-0.28)
Loan	-0.976 (-0.46)	-0.0624 (-0.22)	0.0252 (0.74)	-0.400 (-0.18)	-0.157 (-0.41)	-0.0396 (-0.71)
Deposit	-1.117 (-0.50)	-0.432 (-1.63)	-0.0141 (-0.65)	0.127 (0.05)	-0.299 (-1.25)	0.0142 (0.40)
Operating	-0.00371 (-0.10)	0.00847 (1.58)	-0.000305 (-0.46)	0.0274 (0.62)	-0.00450 (-1.05)	-0.000141 (-0.28)
Legal	-0.0489 (-0.36)	0.0114 (0.55)	-0.00133 (-0.51)	0.0718 (0.47)	-0.00507 (-0.29)	-0.000899 (-0.37)
GDP	0.0734 (1.46)	-0.00451 (-0.86)	-0.00104* (-1.89)	0.0332 (0.79)	-0.00455 (-0.81)	-0.00311*** (-3.72)
Constant	-3.764 (-0.86)	0.775 (1.19)	0.0560 (0.66)	-5.129 (-0.87)	1.004 (1.08)	0.0467 (0.31)
Observations	435	472	380	518	530	380
AR(2) test (p-value)	(0.16)	(0.46)	(0.54)	(0.19)	(0.34)	(0.97)
Hansen test of over-identification (p-value)	(0.39)	(0.44)	(0.52)	(0.17)	(0.19)	(0.60)

This table reports two-step dynamic panel system GMM estimations of risk measures (distance to default *DD*, bank stock return volatility *Volatility*, and ratio of non-performing loans to total assets *NPL*) on the index measuring the presence/influence of minority directors (*Minority*), and control variables. In Panel A, we exclude Spain and Italy that prescribe the presence of minority directors with, however, no obligation for companies to comply or explain deviations from this. 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, with \*, \*\*, and \*\*\* denoting 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 of the paper.