Article

The Effect of Multiple Large Shareholders on Banks' Profitability and Risk

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Abstract: The wide-ranging academic literature on corporate governance in the banking sector includes only a few studies on bank ownership and, specifically, on the comparative power of shareholders within the corporate structure. This paper reports an investigation into the presence of multiple large shareholders and their influence on profitability and risk in the long-term, considering a sample of 697 U.S. and European listed commercial banks from 2008 to 2018. It was found that the number of large and institutional shareholders has a positive impact on profitability, but no effect on risk. However, long-term ownership by multiple large shareholders contributes to decreasing risk in banks.

1. Introduction

Good corporate governance in banks is fundamental to the proper functioning of the financial sector and essential to achieving and maintaining public trust and confidence in the banking system. Because of the crucial financial intermediation role of banks, weaknesses in their corporate governance can determine problems not only for the sustainability of the financial companies themselves but also for the economy as a whole. For this reason, and especially in the aftermath of the 2007–2009 financial crisis, financial supervisors have paid great attention to sound corporate governance in banks in order to promote practices aimed at preventing governance failures.

At the same time, academic literature reveals an intense focus on bank corporate governance in recent years. Most papers in this area have been concentrated on the composition and functioning of the board of directors, with scholars investigating its role in monitoring risk-taking behavior and improving performance. Surprisingly, to date the issue of bank ownership and the comparative power of shareholders within the corporate structure have been analyzed in depth in only a few studies. Most previous studies of bank ownership structure (e.g., References [1,2]) have focused mainly on dominant or major shareholders, while the joint presence of multiple large shareholders, and the role of long-term large shareholders, have so far been less investigated [3].

Previous literature has investigated the relationship between multiple large shareholders and non-financial firms' performance and risk. The results obtained have suggested that the presence of multiple large shareholders may reduce agency costs and improve firm performance [4]. Papers analyzing the impact of multiple large shareholders and non-financial firm risk are scarce and find that higher corporate risk taking is strongly associated with the presence of an ownership structure involving multiple large shareholders [5].

However, previous evidence on non-financial companies cannot be extended to the banking sector, due to its specific features. First, agency problems in banks are more severe

due to asymmetric information and moral hazard, meaning agency costs are more pronounced [4]. Second, bank shareholders do not internalize the social cost of bankruptcy [6]. Third, the presence of public insurance on deposits reduces debtors' control [6,7]. This context generates a unique setting regarding agency problems and their impact on banks' risk and profitability. The presence of multiple large shareholders may have a different influence for banks, compared with the presence of dominant or major shareholders. Our paper tries to fill this gap, investigating the influence of ownership structure on bank profitability and risk.

In recent decades, as a result of financial globalization the number of bank shares owned by large and institutional shareholders has grown rapidly [8,9]. Their role is essentially that of monitoring bank management [9,10] in order to improve firm value and performance, although this supervisory role can sometimes be reduced by strict regulation [11,12]. For instance, large and institutional shareholders can contribute to reducing managerial myopia, i.e., raising management awareness of investments characterized by longer-term positive net present value than short-term projects [13]. Moreover, they can help to mitigate asymmetric information problems [14,15] by encouraging managers to avoid under-investments [9], concentrating on more profitable operations. Our study expands the existing literature on the relationship between short- and long-term relevant investors and banks' performance, and it is one of few studies investigating the role of long-term relevant investors on risk in the banking sector, which, to our knowledge, has not previously been specifically investigated. We conducted our analysis on a dataset of 697 listed commercial banks from the USA and Europe over the period 2008–2018. The results from two-step System Generalized Method of Moment (SGMM) estimations show that a higher number of large and institutional shareholders increases bank profitability, while greater participation (at individual and cumulative levels) by relevant shareholders does not. Therefore, a high number of shareholders seems to guarantee increased communication during shareholder meetings, together with a mix of representatives on the board of directors. This could help render different skills and experiences available and protect the interests of the various stakeholders, thus improving bank performance. Moreover, our evidence, contrary to the existing literature on this topic in non-financial companies shows that the presence of multiple large shareholders does not increase banks' risk taking, while the presence of long-term large shareholders tends to reduce it. Thus, keeping stock participation stable over time may contribute to determining banks' business stability and sustainability.

The paper is organized as follows. Section 2 provides the literature review, while Section 3 introduces our sample and methodology. Section 4 describes our results while Section 5 tests their robustness. Finally, Section 6 presents our conclusions.

2. Literature Review and Hypotheses

2.1. The Effect of Multiple Large Shareholders on Profitability and Risk in the Banking Sector

The relationship between ownership structure and firm performance has been the subject of important debate in the corporate finance literature. In the empirical literature, several studies indicate that multiple large shareholders (henceforth MLS) participate in the firm's internal decision making processes and affect firm valuation [16–23]. However, conclusions in this area are not convergent. On the one hand, the 'alignment of interest' hypothesis driven by the coalition formation effect [24] and the bargaining effect [25] demonstrate that MLS has a positive impact on a firm's profitability. On the other hand, a dispersion effect of MLS negatively impacts the level of a firm's performance [26–28].

The relationship between MLS and firm performance has been much explored within non-financial institutions [17,21,23,28–30]. However, the impact of MLS on bank profitability has until now been underexplored. Most previous studies of bank ownership structure [1,2,31,32] have focused on dominant or major shareholders and demonstrate the existence of a positive relationship between ownership concentration and bank perfor-

mance [6,33,34]. However, to our knowledge, the effect of MLS on bank profitability has not yet been investigated.

Reference [35] investigated a sample of 27 Nigerian banks observed over the period 2006–2015 and concluded that banks with high ownership concentration are more profitable. However, banks with dispersed ownership record lower ROA and higher ROE. Reference [36] analyzed a sample of 74 commercial banks from four transaction economies of southeast Europe over the period 2005–2010. They found that ownership concentration significantly decreases bank profitability. Reference [37] used a data set of 89 commercial banks in India during the period from 2008–2009 to 2012–2013 and found that ownership concentration has no significant effect on ROA. Reference [3] considered a sample of 38 conventional banks in MENA (Middle East and North Africa) regions over the period 2004–2015, and showed that, in accordance with the 'alignment of interests' hypothesis, coalition between the largest shareholders increases bank profitability only for ROA.

Based on this evidence, we formulate the following hypotheses:

Hypothesis 1 (H1): *A higher number of large and institutional shareholders increases bank profitability.*

Hypothesis 2 (H2): *A higher participation (at individual and cumulative level) by relevant shareholders increases bank profitability.*

To our knowledge, the relationship between MLS and risk in the banking sector has previously been unexplored. In addition, papers investigating the impact of MLS on firm risk in other industries are also scarce. Among the few papers on this topic, Reference [38] considered a sample of non-financial listed companies from Spain, Italy, Greece, and Portugal for the period 2001–2014 with the aim of studying the relationship between institutional ownership structure and corporate risk-taking. They concluded that a proactive role by investment funds generates an increase in the level of companies' risk-taking. Reference [39] confirmed that risker firms are more productive and more likely to be held by institutional investors. Reference [5] examined a sample of 1686 firms from nine countries in east Asia, finding that higher corporate risk taking is strongly associated with the presence of an MLS structure. In the same area, Reference [21], using a sample of publicly listed French family firms over the period 2003–2012, showed that the presence, number and voting power of MLS are associated with higher risk-taking.

As suggested by these studies, we test the following hypothesis:

Hypothesis 3 (H3): *The presence of MLS increases bank risk.*

2.2. The Role of Short- or Long-Term Ownership on Firm Profitability and Risk

The role of institutional and large owners in corporate governance has so far been investigated from two main viewpoints: active monitoring and passive monitoring. On the one hand, the active monitoring view argues that relevant owners are active monitors and tend to reduce agency conflicts, minimize information asymmetries, and improve firm performance [40]. According to References [41,42], sophisticated institutions with large shareholdings tend to monitor and discipline managers to ensure that the firm's investment strategy is consistent with the objective of maximizing long-term value rather than meeting short-term earning goals. Consistent with this point of view, empirical studies have provided evidence for a variety of benefits from institutional ownership. For instance, it affects firm growth (e.g., Reference [43]), firm performance (e.g., References [44,45]), R&D investment (e.g., References [43,46]), executive compensation (e.g., Reference [47]), management earning forecast disclosures (e.g., Reference [48]), CEO turnover (e.g., References [8,49]), antitakeover amendments (e.g., References [50–52]), and corporate governance in general (e.g., References [53–55]). The monitoring view is also consistent with evidence that active institutional shareholders have the incentive and expertise to monitor the management at a lower cost than atomistic shareholders [40], are able to affect corporate events, and enhance corporate value [56–60]. References [44,61–64] found that institutional owner-

ship concentration serves a monitoring role in mitigating the agency problem between shareholders and managers. Reference [65] investigated the association between corporate performance and the level and stability of institutional ownership, including ownership persistence and the time-lengths over which investors hold non-zero shares or maintain their shares. They found a positive relationship between firm performance and institutional ownership stability.

On the other hand, the passive monitoring view argues that institutional and large investors do not actively participate in management decisions and are, therefore, not interested in improving firm governance and performance, as they invest their money only to attain a short-term capital gain [66]. Thus, passive institutional and large owners are considered short-term investors acting like 'traders', holding or selling their stocks according to their portfolio rebalancing needs instead of intervening in corporate governance. In particular, in this passive view, empirical research suggests that institutional investor trade is heavily based on news concerning current earnings (e.g., Reference [67]), places excessive emphasis on short-term performance, and fails to serve as a monitor in correcting CEO overcompensation (e.g., Reference [68]). Reference [69] argued that the impact of institutional ownership on strategic management decision-making may be influenced by short-term investments realized by this kind of investor. Reference [70] demonstrated a positive relationship between institutional ownership and future stock returns driven by institutions' short-term activities. Moreover, according to these authors, institutions carrying out short-term investment are better informed and they trade actively to exploit their informational advantage.

Extant studies on the effect of long- or short-term ownership horizons cover many sectors, but not banks. Only a few studies on the banking sector exist in this area, and they concentrate on the relationship between bank ownership and efficiency. For instance, References [71–73] found that bank efficiency is positively related to foreign (as opposed to state) ownership, while Reference [74] showed that private banks are more efficient than state-owned banks. However, in extant studies, there is a lack of information about the effect of short- or long-term institutional investors on bank performance and risk.

With the aim of filling this gap, we introduce the following hypothesis:

Hypothesis 4 (H4): *Significant equity investments held for longer periods increase profitability and decrease risk in banks.*

3. Data Sample and Methodology

3.1. The Sample

Our sample consisted of a wide dataset of U.S. and European listed commercial banks. More specifically, we examined an unbalanced panel of 697 banks during the period 2008–2018. The panel composition is shown in Table 1: values are computed as the ratio of number of banks in each country out of total banks.

Table 1. Sample distribution by country.

Country	Percent
Austria	1.18
Cyprus	0.24
Denmark	1.18
Finland	0.47
France	0.95
Germany	0.47

Table 1. *Cont.*

Country	Percent
Italy	2.6
Norway	2.6
Portugal	0.47
Spain	0.71
Sweden	0.24
Switzerland	0.47
United Kingdom	0.24
U.S.	88.18
Total	100

U.S. banks dominated the sample, accounting for about 88% of it, while Norway and Italy are the most represented European countries. This can be explained by considering the peculiar ownership structure of banks operating in these areas and data availability, and implies that our sample composition does not proportionally replicate the numbers of banks in European countries and in the U.S.

3.2. Methodology

Financial data were extracted from S&P Global Market Intelligence (formerly SNL Financial). They include several income statement and balance sheet items accounting for profitability, size, business model, capitalization, loan portfolio quality, and efficiency. In order to calculate yearly measures of profit volatility, we made use of quarterly data for our profitability measure, i.e., ROAE (Return on Average Equity).

Ownership information was extracted from Datastream-EIKON. We focused on shareholdings equal to or higher than 1% to identify relevant long-term bank capital owners. Since no neat formula exists to identify a shareholder as a long-term shareholder, for the purpose of this analysis, we considered Rule 14a-8 (the 'Shareholder Proposal Rule') enacted by the SEC. According to this Rule, a long-term shareholder is one who has continuously held at least USD 2000 in market value or 1% of the company's voting securities for at least one year at the date of submission. Abnormal values (e.g., sum of shareholdings higher than 100%) were checked manually using available documents extracted from banks' websites.

In order to explore the relationship between bank ownership structure and banks' risk-adjusted profitability, we ran a two-step system GMM estimation [75,76] using the following model:

$$Y_{it} = \alpha_0 + \alpha_1 Y_{i,t-1} + X_{it}\gamma + Z_{it}\omega, \tag{1}$$

where Y is the dependent variable, X is a vector of bank-specific financial covariates, and Z is a vector of bank-specific ownership items; i and t are bank and time identifiers, respectively. Time dummies were included in each estimation. More specifically, dependent variables included the level and volatility of profitability, measured by ROAE (within each year, based on quarterly data).

As regards the length of ownership, a crucial point is the distinction between short- and long-term shareholders. According to the rule previously described, we considered as long-term shareholders those having continuously held at least 1% of bank shares for at least 1 year (at least 4 consecutive quarters for the purpose of our analysis model) within a rolling window of time starting from year *t-4* and ending in year *t*. At least one quarter of ownership must belong to year *t*. We computed 4 different covariates regarding ownership for each year:

- *mean*: simple average participation of the relevant shareholders who respect the preconditions described above;
- *count*: number of relevant members who respect the preconditions described above;
- *sum*: total of the average holdings of the significant shareholders (almost equivalent to the annual average sum of the significant holdings);

- *time*: simple average number of quarters of participation by the relevant shareholders.

Bank-specific variables accounted for several firm characteristics. Bank specialization was captured in the ratio between loans and total assets. This covariate can be considered a proxy of experience in granting credit to customers, and, in previous literature, a positive effect of this variable on bank profitability has been reported [77,78]. However, during the period following the collapse of Lehman Brothers, macroeconomic conditions penalized credit activities, pushing the banking system towards diversification processes. We accounted for the different shape of capital structure (capitalization) using the equity to total assets ratio. High values of capitalization indicate a low leverage, and therefore low riskiness: following the conventional risk-return hypothesis, this should lead to a lower expected profitability. However, as pointed out by Reference [79], lower risk is likely to reduce funding costs, with a positive effect on profitability. Under these contrasting views, the expected impact of banks' capitalization on profitability is in theory not determined. Since during the period under investigation credit quality and efficiency severely impacted on banks' overall profitability, we introduced two variables to control for these elements. More specifically, the estimation model included the impaired loans over total loans ratio and the cost-income ratio. Impaired loans are part of the overall cost of lending; hence, they have an expected negative impact on bank profitability [80]. The same occurs for the cost income ratio: calculated as ratio between operating costs and gross revenues, this covariate is a widely used measure of bank efficiency. A lower level of this ratio indicates greater cost-efficiency, with an expected positive effect on bank profitability (see, among others, References [77,79,81]. Moreover, we included the natural logarithm of total assets to control for bank size.

The definitions of all the variables used in this study are shown in Table 2; descriptive statistics are presented in Table 3. We dealt with the presence of severe outliers employing a winsorization process (2.5% each tail).

Table 2. Variable description.

Variable	Description	Expected Sign
Dependent variables		
ROAE	Return on average equity	
St.dev.ROAE	Standard deviation of the Return on average equity	
Target variables		
Count	Number of relevant shareholders	+;+
Mean	Average participation by the relevant shareholders	+;+
Sum	Total of the average holdings of the significant shareholders	+;+
Time	Average number of quarters of participation by the relevant shareholders	+;−
Control variables		
Size	Natural logarithm of total assets	+/−;+/−
Capitalization	Equity over total assets	+/−;−
Specialization	Loans over total assets	+/−;+/−
Impaired loans	Impaired loans over total loans	−;+
Cost income	Cost income ratio	−;+
U.S. banks	Dummy variable (1 for U.S. banks, 0 otherwise)	+/−;+/−

Note: The two sets of expected signs of the coefficients obtained by econometric estimations are referred to profitability and risk regressions, respectively.

Table 3. Descriptive statistics.

Variables	Observations	Median	Mean	Std. Dev.	Min	Max
ROAE	4586	7.532	6.299	6.312	−34.574	17.269
St.dev.ROAE	4698	7.532	3.937	6.311	0.243	47.329
Size	4552	13.871	14.241	1.655	10.976	19.456
Capitalization	4532	10.062	10.325	2.667	3.813	20.607
Specialization	4698	69.303	68.176	10.616	32.456	87.464
Impaired loans	4513	1.804	2.831	2.878	0.030	15.551
Cost income	4698	67.206	68.773	13.629	42.011	131.141
Count	4698	9.000	7.642	4.675	1	19
Mean	4601	3.392	5.218	5.245	1.453	40.003
Sum	4698	31.603	32.286	18.592	1.743	80.298
Time	4698	17.182	16.712	2.708	8.500	20

Our analysis revealed great variability in ROAE in the investigated period. Overall, banks in the sample have an average level of equity over total assets which is greater than 10%, with a high variability even within individual intermediaries over time. This is due to the thrust from prudential regulation aimed at increasing equity capital. On average, loans account for over 68% of total assets; about 3% of these credits are non-performing. The level of efficiency, measured by the cost income ratio, assumes an average value of just under 69% but with strong variations within the sample. With reference to the governance variables, the average number of significant shareholders is higher than 7, and the average significant shareholding is just over 5%. The total of significant holdings is on average close to 32%, with a holding period of the package exceeding 4 years (16 quarters).

4. Results

We used a two-step system GMM estimator (Windmeijer correction for standard errors [82]) in order to control for endogeneity of the lagged dependent variable and its high persistence, while we provide some key diagnostics to ensure the consistency of the System GMM estimations. First, the absence of first and second order serial correlations in the first-differenced residuals was tested using the Arellano and Bond statistics [83]. Second, we used the Hansen test of over-identifying restrictions for the null hypothesis of instrument validity [84]. Third, we utilized the Difference-in-Hansen test for the null hypothesis of the validity of additional moment conditions [76]. Finally, we checked that the number of instruments was smaller than or equal to the number of groups in a regression to avoid finite sample bias caused by overfitting [85].

As regards the level of return on average equity (column 1), a statistically significant autoregressive effect was not observed. Size is associated with a negative and significant coefficient: smaller banks experienced higher levels of profitability. Specialization in the credit sector is associated with a negative and statistically significant coefficient; therefore, banks more exposed to loans to customers suffered a low level of profitability in the period under investigation.

Table 4 shows the results of our estimates on the level and volatility of ROAE.

Similar evidence was given by the variable "Impaired loans", which provided indications on credit portfolio quality: a higher level of non-performing loans led to a decrease in the level of ROAE.

Similarly, the coefficient associated with the cost-income ratio has a negative sign and broad statistical significance: as expected, more inefficient banks experienced a lower ROAE.

With reference to the governance variables, the number of reference shareholders has a positive impact on bank profitability: from this point of view, it emerges that, in terms of profitability, having numerous owners with qualified shareholdings is better than having

a single subject controlling the bank. This leads to confirmation of H1, as suggested by Reference [3].

Table 4. Return on Average Equity (ROAE) (main estimations).

Variables	(1) ROAE	(2) ROAE	(3) st.dev.ROAE	(4) st.dev.ROAE
ROAE $_{t-1}$	0.04	0.14 *		
	(0.070)	(0.077)		
st.dev.ROAE $_{t-1}$			−0.06	0.03
			(0.103)	(0.106)
Size	−2.27 ***	−0.67	0.98	−0.75
	(0.726)	(0.579)	(0.810)	(0.692)
Capitalization	−0.09	−0.04	−0.47 ***	−0.57 ***
	(0.141)	(0.184)	(0.139)	(0.179)
Specialization	−0.11 ***	−0.13 ***	0.12 ***	0.11 **
	(0.040)	(0.039)	(0.040)	(0.046)
Impaired loans	−0.88 ***	−0.89 ***	0.72 ***	0.78 ***
	(0.149)	(0.149)	(0.137)	(0.150)
Cost income	−0.25 ***	−0.16 ***	0.12 ***	0.03
	(0.050)	(0.058)	(0.044)	(0.048)
Count	0.15 **		−0.10	
	(0.064)		(0.078)	
Mean	0.08		−0.10	
	(0.062)		(0.070)	
Sum		0.02		−0.01
		(0.018)		(0.023)
Time		0.04		−0.09 *
		(0.046)		(0.052)
U.S. banks	−4.50 ***	−1.87	1.33	−0.62
	(1.646)	(1.255)	(1.647)	(1.175)
Constant	66.32 ***	35.61 ***	−20.66	12.56
	(13.775)	(13.006)	(15.335)	(14.759)
TIME DUMMIES	(YES)	(YES)	(YES)	(YES)
Observations	4549	4545	4439	4421
Number of banks	692	690	696	693
Instruments	52	52	52	52
Hansen-J test	0.002	0.017	0.130	0.228
Diff-in-Hansen test	0.719	0.214	0.565	0.615
AR(1)	0.000	0.000	0.000	0.000
AR(2)	0.416	0.715	0.728	0.287

Heteroscedasticity-consistent standard errors are in parentheses. Windmeijer finite sample correction for standard errors is employed. The superscripts *, ** and *** denote significance at the 10%-, 5%-, and 1%-level, respectively. The row for the Hansen J-test reports the *p*-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen test are the *p*-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR (1) and AR (2) are the *p*-values for first and second order autocorrelated disturbances in the first differences equations.

On the other hand, the coefficient associated with the variable "mean", i.e., the average level of participation by the relevant shareholders, is not significant. From this point of view, it emerges that the number of shareholders is more important than the shares they hold. Thus, our H2 is rejected.

Column 2 reports the estimates related to the level of ROAE using sum and time as explanatory variables of governance. The former variable, which accounts for the total amount of significant shareholdings, is not statistically significant: the presence of a solid majority block is, therefore, not associated with better income results. Similarly, the average holding time of qualified shareholding does not appear to be significant. The other explanatory variables assume statistical and significant signs similar to those previously described; only size shows different results, maintaining a negative sign, but the variable is not statistically significant.

With reference to the volatility of ROAE (columns 3 and 4), many coefficients associated with explanatory variables take opposite signs compared to those previously described. The level of capitalization shows a negative effect on the volatility of revenues: therefore, banks which are more solid from a capital point of view obtain more stable results. Increased exposure to the activity of granting loans to customers, on the contrary, amplifies banks' ROAE volatility; a similar effect is generated by poor credit quality, measured by the "Impaired loans" variable. These results are not surprising, in light of the noteworthy impact that the after-effects of the financial crisis linked to subprime mortgages have had on banks' balance sheets worldwide.

Similarly, decreasing revenues have rendered the issue of cost efficiency crucially important for banks: the positive and significant coefficient associated with the cost-income ratio demonstrates that lower efficiency is accompanied by greater volatility of ROAE.

With reference to the estimated governance variables, the number of significant shareholders is not statistically significant. The coefficient associated with the average share of significant owners does not show adequate statistical significance.

Likewise, the total of the average holdings of significant shareholders (Sum) is not statistically significant. On the contrary, the number of quarters of participation by relevant shareholders reduces ROAE volatility. This result leads us to reject H3, but it confirms that previous studies analyzing non-financial companies cannot be extended to the banking sector. For the same reason, H4 is partially confirmed. In fact, significant equity investments held for longer periods decrease risk in banks, determining business stability and sustainability, while their positive influence on banks' profitability is not confirmed.

5. Robustness Checks

In order to test the previous results, some robustness tests were conducted. A first investigation saw the replacement of ROAE with another profitability measure, i.e., Return on Average Assets (ROAA). Table 5 reports the results of this test with reference to both the level and the volatility of ROAA.

Overall, the covariates used to explain the level of profitability of banks show signs similar to those previously described. However, the significance of coefficients does not always reach adequate values. This happens with reference to the coefficients associated with dimension and the two governance variables Count and Mean (column 1). In addition, Sum and Time, inserted in column 2, obtain positive coefficients but are not statistically significant.

With reference to the volatility of ROAA, once again, the coefficients of the explanatory variables have signs consistent with what has been described above, but only the level of impaired loans reaches adequate levels of statistical significance. As regards the governance variables, it is confirmed that the number of significant shareholders is associated with a contraction in the volatility of banks' profits, even if with a statistical significance close to 10%. Sum and Time, once again, do not obtain coefficients of adequate statistical significance.

A further robustness test was conducted using three extremely well-known governance measures instead of the previously indicated independent variables: Non-zero, Maintain-stake and IOP (for methodological notes about these measures, see Reference [65]). Table 6 provides the evidence from this further test. Overall, the results referable to both ROAE and ROAA are similar to those previously described, at least as regards the control variables. On the contrary, the three governance variables never reach adequate statistical significance.

Table 5. Return on Average Assets (ROAA) (robustness checks).

	(1)	(2)	(3)	(4)
Variables	**ROAA**	**ROAA**	**st.dev.ROAA**	**st.dev.ROAA**
ROAA $_{t-1}$	0.19 **	0.29 ***		
	(0.081)	(0.085)		
st.dev.ROAA $_{t-1}$			0.02	0.16
			(0.109)	(0.107)
Size	−0.12 *	0.00	−0.00	−0.09
	(0.066)	(0.055)	(0.072)	(0.058)
Capitalization	−0.00	−0.01	0.00	−0.00
	(0.011)	(0.014)	(0.011)	(0.013)
Specialization	−0.01 **	−0.01 ***	0.00	0.00
	(0.004)	(0.004)	(0.004)	(0.004)
Impaired loans	−0.06 ***	−0.06 ***	0.05 ***	0.05 ***
	(0.013)	(0.013)	(0.011)	(0.013)
Cost income	−0.02 ***	−0.01 *	0.01	−0.00
	(0.005)	(0.006)	(0.004)	(0.004)
Count	0.01 **		−0.00	
	(0.005)		(0.007)	
Mean	0.00		−0.01	
	(0.005)		(0.006)	
Sum		0.00		−0.00
		(0.002)		(0.002)
Time		0.00		−0.01
		(0.004)		(0.005)
U.S. banks	−0.14	0.08	−0.04	−0.12
	(0.135)	(0.110)	(0.133)	(0.102)
Constant	3.97 ***	1.65	−0.13	1.59
	(1.351)	(1.308)	(1.345)	(1.223)
TIME DUMMIES	*(YES)*	*(YES)*	*(YES)*	*(YES)*
Observations	4578	4569	4424	4400
Number of banks	692	689	697	692
Instruments	52	52	52	52
Hansen-J test	0.001	0.057	0.088	0.139
Diff-in-Hansen test	0.265	0.267	0.787	0.515
AR(1)	0.000	0.000	0.000	0.000
AR(2)	0.547	0.837	0.363	0.059

Heteroscedasticity-consistent standard errors are in parentheses. Windmeijer finite sample correction for standard errors is employed. The superscripts *, ** and *** denote significance at the 10%-, 5%-, and 1%-level, respectively. The row for the Hansen J-test reports the *p*-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen test are the *p*-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the *p*-values for first and second order autocorrelated disturbances in the first differences equations.

Table 6. Other governance measures (robustness checks).

	(1)	(2)	(3)	(4)	(5)	(6)
Variables	**ROAE**	**ROAE**	**ROAE**	**st.dev.ROAE**	**st.dev.ROAE**	**st.dev.ROAE**
ROAE $_{t-1}$	0.07	0.03	0.03			
	(0.080)	(0.076)	(0.072)			
st.dev. ROAE $_{t-1}$				−0.06	−0.04	−0.05
				(0.095)	(0.102)	(0.100)
Size	−1.13	−1.50 **	−2.26 ***	0.77	0.23	0.82
	(0.702)	(0.661)	(0.756)	(0.801)	(0.700)	(0.697)
Capitalization	−0.07	−0.01	0.06	−0.49 ***	−0.54 ***	−0.54 ***
	(0.155)	(0.165)	(0.152)	(0.150)	(0.158)	(0.152)

Table 6. *Cont.*

Variables	(1) ROAE	(2) ROAE	(3) ROAE	(4) st.dev.ROAE	(5) st.dev.ROAE	(6) st.dev.ROAE
Specialization	−0.12 ***	−0.13 ***	−0.12 ***	0.14 ***	0.13 ***	0.14 ***
	(0.038)	(0.037)	(0.038)	(0.042)	(0.044)	(0.042)
Impaired loans	−0.87 ***	−0.90 ***	−0.90 ***	0.71 ***	0.72 ***	0.71 ***
	(0.150)	(0.150)	(0.145)	(0.141)	(0.148)	(0.141)
Cost income	−0.23 ***	−0.27 ***	−0.28 ***	0.13 **	0.11 **	0.13 ***
	(0.066)	(0.059)	(0.060)	(0.052)	(0.050)	(0.048)
MAINTAINSTAKE	−0.05			0.11		
	(0.063)			(0.074)		
NONZERO		-0.00			−0.02	
		(0.053)			(0.061)	
IOP			−0.01			0.29
			(0.291)			(0.240)
U.S. banks	−1.97	−2.57 *	−4.28 **	1.28	0.22	1.67
	(1.366)	(1.372)	(1.758)	(1.461)	(1.250)	(1.499)
Constant	49.47 ***	58.46 ***	69.40 ***	−21.65	−10.09	−22.08
	(15.770)	(14.359)	(15.105)	(16.321)	(15.181)	(13.819)
TIME DUMMIES	*(YES)*	*(YES)*	*(YES)*	*(YES)*	*(YES)*	*(YES)*
Observations	4541	4453	4387	4427	4336	4277
Number of banks	684	677	668	687	681	670
Instruments	47	47	47	47	47	47
Hansen-J test	0.002	0.003	0.035	0.000	0.000	0.002
Diff-in-Hansen test	0.024	0.912	0.027	0.070	0.399	0.030
AR(1)	0.000	0.000	0.000	0.000	0.000	0.000
AR(2)	0.299	0.194	0.155	0.486	0.391	0.381

Heteroscedasticity-consistent standard errors are in parentheses. Windmeijer finite sample correction for standard errors is employed. The superscripts *, ** and *** denote significance at the 10%-, 5%-, and 1%-level, respectively. The row for the Hansen J-test reports the *p*-values for the null hypothesis of instrument validity. The values reported for the Diff-in-Hansen test are the *p*-values for the validity of the additional moment restriction necessary for system GMM. The values reported for AR(1) and AR(2) are the *p*-values for first and second order autocorrelated disturbances in the first differences equations.

6. Conclusions and Policy Implications

Relevant institutional investors have the potential to influence the corporate choices of the banks they invest in. Their stakes in these companies, and so their financial incentive, encourages them to play a monitoring function as regards management. Thanks to their specific knowledge of the industry, institutional investors can in fact contribute to mitigating asymmetric information problems and reducing managerial myopia, thus influencing banks' financial performance and risk. Our paper contributes to the existing literature regarding the effect of relevant and multiple shareholders on bank profitability, as well as confirms that a higher number of large and institutional shareholders increases bank profitability [36,37]. However, contrary to previous research [65] based on non-financial companies, our results demonstrate that significant equity investments held for longer periods do not increase bank profitability. Our results fill the gap in the literature regarding the relationship between relevant and multiple shareholders and bank risk. Contrary to previous studies on non-financial firms [5,21,38,39], we argue that the presence of MLS does not increase bank risk. Moreover, relevant equity investments held over a long period decrease bank risk behavior. As a consequence, banks with a higher number of long-term MLS could implement a more real-economy-oriented credit policy, due to a more stable level of capital, and achieve better management efficiency. Thus, the results obtained are important from different perspectives. From an academic point of view, they show

that the number of multiple relevant shareholders positively influences bank profitability. This corroborates the 'alignment of interest' hypothesis and reveals the existence of a "shareholder diversification effect": a high number of shareholders in fact guarantees increased communication during their meetings and a mix of representatives on the board of directors, able to contribute different skills and experiences and protect the interests of the various stakeholders. Downstream, this can determine a positive impact on bank performance. The number of shareholders seems to be more important in explaining bank performance than the amount of shares they hold. Moreover, the presence of multiple large shareholders does not increase banks' risk taking, while the presence of long-term large shareholders tends to reduce it. From a managerial point of view, bank shareholders should not fear ex ante an increase in the share base; on the contrary, they should encourage it as necessary, given that it represents an element positively related to financial performance. Moreover, major bank shareholders should try to keep their stocks stable over time, as this could contribute to determining business stability and sustainability.

As research on the role of multiple institutional shareholders in banks and a relationship with profitability and risk levels is scarce, future research could investigate this topic more in depth, for example, considering different types of institutional shareholders. Furthermore, it could be interesting to test whether different types of long-term large ownerships (e.g., public vs. private) produce different effects on banks' performance and risk. This analysis would be particularly relevant since multiple public holdings have become more common in bank share capital since the global economic crisis and would provide useful suggestions for financial regulators.

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