This paper explores the factors influencing the board composition of an international sample of commercial banks over the period 1996–2006. After considering the dual role of the board as monitor and advisor, our analysis shows that no one board composition is optimal for the banking industry and that any such recommendation could harm bank governance. Our results suggest that more complex banks that have a low ownership concentration and are headquartered in a civil law country should have larger and more independent boards. Copyright © 2012 John Wiley & Sons, Ltd.

1. INTRODUCTION

The global financial crisis that began in 2008 brought into question the effectiveness of the governance mechanisms for the banking industry. Only 9 years after the Enron scandal, the world once again became aware of the consequences of bad corporate governance. As the events of 2008 and beyond showed, when linked to the financial markets and thus financial intermediaries, the consequences of poor governance practices are even more harmful. Financial intermediaries are a cornerstone of the economy as they create financial assets, manage risks, and reduce the inherent information asymmetry in monetary transfers among economic agents (Merton and Bodie, 2005). However, as the Basel Committee guidance on corporate governance for banking organizations (2010) points out, the existence of a governance problem can influence the behavior of these intermediaries. The resulting behavior may end in a bank failure, which can pose significant public costs and macroeconomic implications such as contagion risk and impact on payment risks. These macroeconomic implications, even at their less harmful level, are related to the loss of confidence of depositors, higher restrictions on credit access, and, consequently, a reduction in the investor process. Therefore, corporate governance of banks, defined as a set of mechanisms that ensure the efficient investment of financial resources, is a key issue in terms of maintaining economic stability. In line with these arguments, the board of directors, if optimally configured, can play a vital role in maintaining effective corporate governance.

The traditional literature on banking governance has addressed the effect of bank boards on corporate value. These studies suggest that board size, composition, and activity affect the board’s effectiveness and, consequently, bank value. Contrary to the findings in nonfinancial studies, board size shows a positive (Adams and Mehran, 2008) or nonlinear (Andres and Vallelado, 2008) effect on bank value. Regarding board
independence, empirical evidence points at a positive effect of outsiders on bank value (Andres and Vallelado, 2008) although its significance seems to be fairly poor (Adams and Mehran, 2008). Despite most banking literature showed different effects of board’s composition on bank’s performance compared with the nonfinancial firms, the codes of good governance were irrespectively used, and banks configured their boards according to the best practices principles of their nonfinancial counterparts.

Even more, following the best practices guidelines without taking into consideration the idiosyncrasies of an entity (financial or nonfinancial) may not be an optimal decision. During the recent years, research in banks has begun to follow the lead of nonfinancial studies (Boone et al., 2007; Coles, Daniel and Naveen, 2008; Linck, Netter and Yang, 2008; Lehn, Patro and Zhao, 2009; Drakos and Bekiris, 2010) to explain governance mechanisms as endogenously determined mechanisms. Thus, the question is no longer focused on the relation between governance systems and banking performance but rather on what determines those governance mechanisms (Adams and Mehran, 2008; Belkhir, 2009).

The most recent research on this issue uses explanations based on the optimal composition in terms of efficiency. To consider efficiency explanations, studies examine the two main functions of the board, advising and monitoring (Raheja, 2005; Adams and Ferreira, 2007), and investigate which firm-specific features result in these two functions creating value (Guest, 2008). The need for advising is generally defined by bank size and complexity, and the need for monitoring is defined by the presence of a governance problem that is not solved by any other governance mechanism.

Our paper sheds light on the board determinants of financial entities. We follow in the line of Adams and Mehran (2008) and Belkhir (2009), but we expand the industry knowledge base by using data from different countries. On the one hand, using an empirical analysis focused on companies belonging to the same industry, such as banking, has the advantage that most of the external control mechanisms have the same effect on all companies, at least of a certain size, in the industry (Belkhir, 2009). On the other hand, by studying several countries with different legal systems, we investigate whether the explanations for the board determinants are dissimilar depending on the parent company location.

We find that the codes of governance are so generally defined that they are of little help in coping with the governance problem of a particular bank. In fact, our results suggest that following the basic advice of the codes of good governance could result in increased costs as boards may become bigger and more independent than is necessary to fulfill the bank’s advising and monitoring needs. In other words, we find that each bank must design its board taking into account its idiosyncrasies and the unique environment in which it operates its business.

The remainder of this paper proceeds as follows. In Section 2, we introduce our hypotheses on the determinants of boards in banking. Section 3 presents the data, variables, and econometric model. In Section 4, we provide the results, and in Section 5, we offer our conclusions.

2. THE DETERMINANTS OF BOARDS IN BANKING

The banking industry has particular idiosyncrasies that distinguish it from the nonfinancial sector (Prowse, 1997; Caprio and Levine, 2002). Banking entities are characterized by a high opacity, which relates to higher information asymmetries and to the complexity of bank business (Levine, 2004). Also, the major providers of financial resources in the commercial banking industry are not shareholders but depositors. And finally, banks have a very high debt ratio, which exposes them to a major risk of insolvency in case of a bank run (Macey and O’Hara, 2003).

Also, boards of banking entities are quite different from boards of nonfinancial firms. In particular, boards in the banking sector tend to be bigger and more independent than in the nonfinancial sector. The mean size of a board in the banking sector ranges from 16 to 18 directors (Adams and Mehran, 2008; Andres and Vallelado, 2008), which is higher than the average board size (11–13) reported for large nonfinancial firms (Bhagat and Black, 2002; Yermack, 2004; Coles, Daniel and Naveen, 2008; Lehn, Patro and Zhao, 2009). The mean proportion of outsiders on the board of a banking entity is between 70% and 85% (Adams and Mehran, 2008; Andres and Vallelado, 2008; Belkhir, 2009), which is also higher than the average independence (60%–70%) of the boards in the nonfinancial sector (Bhagat and Black, 2002; Coles, Daniel and Naveen, 2008; Lehn, Patro and Zhao, 2009).

These differences between boards of financial and nonfinancial entities are also present in the remainder of the mechanisms of governance. The greater opacity in banking business makes controlling bank managers more difficult for bondholders, depositors, and shareholders (Levine, 2004). It also makes designing contracts that
align the interests of managers and the rest of stakeholders more difficult and makes it easier for insiders to expropriate outside investors. Opacity also reduces the competitiveness of product market and takeover (Polo, 2007). In this scenario, regulation plays a special role as an additional governance mechanism. Although regulators’ objectives may clash with those of other stakeholders, they are considered one of the main stakeholders in the banking industry (Diamond, 1984) because both the credit and payment systems and economic development depend on the bank’s financial health. Regulation acts as an external governance force that monitors the functioning of bank boards through the laws of each country. So, boards are challenged to be configured to provide optimal advice and control while ensuring that their bank complies with the regulatory requirements in each of the countries in which they operate.

Previous research on board determinants explains a board’s optimal configuration based on efficiency. Several studies show the influence of firm-specific internal and external characteristics on board composition (Boone et al., 2007; Guest, 2008; Linck, Netter and Yang, 2008; Lehn, Patro and Zhao, 2009). These studies link the board’s dual role as advisor and monitor to efficiency and, thus, to value creation. In addition to specific firm characteristics, certain other issues must be considered when evaluating the power of the board to create value. First, the legal system of the country defines the type of governance problem (La Porta et al., 1998, 2000; Beck, Demirgüç-Kunt and Levine, 2003; Levine, 2005) and, consequently, the role of board (Cook, Hogan and Kieschnick, 2004; Adams and Mehran, 2008). Second, whenever several governance mechanisms coexist, their effects are endogenously determined according to the costs and benefits of each one in relation to the other (Gillan, Hartzell and Starks, 2003; Adams and Mehran, 2008; Coles, Daniel and Naveen, 2008; Linck, Netter and Yang, 2008; Belkhir, 2009). Consequently, the optimal corporate governance structure varies across firms depending on their specific characteristics, the legal system, and all other governance mechanisms. As such, the optimal size and independence of the banking board are related to the idiosyncrasies of the bank and its environment.

2.1. Board’s Advisory Role

The advisor role of the board consists of providing the CEO with expert counsel and access to information and resources and is more efficiently performed by a larger and more independent board that can provide important connections and greater information, knowledge, and expertise (Fama and Jensen, 1983; Guest, 2008). According to previous literature on nonfinancial firms, advisory needs are positively related to firm’s size (Denis and Sarin, 1999; Baker and Gompers, 2003; Kim, Kitsabunrat and Nofsinger, 2007; Coles, Daniel and Naveen, 2008; Guest, 2008; Iwasaki, 2008; Linck, Netter and Yang, 2008) and complexity; the latter is generally measured by activity diversification (Denis and Sarin, 1999; Coles, Daniel and Naveen, 2008; Iwasaki, 2008; Linck, Netter and Yang, 2008), firm leverage (Denis and Sarin, 1999; Coles, Daniel and Naveen, 2008; Iwasaki, 2008; Linck, Netter and Yang, 2008), and age (Boone et al., 2007; Coles, Daniel and Naveen, 2008; Guest, 2008; Linck, Netter and Yang, 2008). In the banking industry, boards also have a key advisory role to managers regarding strategy identification and implementation (Andres and Vallelado, 2008). This role is even more critical in the banking industry because of the high complexity of financial business. So, the advisory role of banking boards should be highly positively related to the entity’s size and complexity. Thus, we hypothesize:

H1

Larger and more complex banks may benefit from an advisory board, which will result in larger and more independent boards.

2.2. Board’s Monitoring Role

The monitoring role of the board consists of controlling the managerial behavior to avoid the investors’ wealth expropriation (Fama and Jensen, 1983). A board’s monitoring role is more efficiently performed by larger and more independent boards (Raheja, 2005; Guest, 2008; Lehn, Patro and Zhao, 2009). This relation is particularly relevant in industries such as commercial banking, in which the benefits from a larger board—such as political influence with a regulatory body or assistance in attracting more business (Agrawal and Knoeber, 2001; Gillan, Hartzell and Starks, 2003)—can outweigh coordination and free rider problems (Jensen, 1993; Yermack, 1996).

The banks’ need of an effective monitoring board is related to the existence of alternative governance mechanisms. In addition to the board of directors, the legal and institutional environment and the ownership structure can also serve as monitoring mechanisms to reduce agency conflicts and ease the governance problem between investors and managers (Li, 1994; Bathala and Rao, 1995; Mak and Li, 2001). Thus, when a substitute governance mechanism provides effective monitoring,
the board does not need to increase its size by including more outsiders to enhance its monitoring role.

Regarding the legal and institutional environment, literature on corporate governance illustrates that protection of investors’ rights vary significantly among countries, due in part to differences in legal origin. Whereas civil law countries tend to provide investors with weaker legal rights, common-law countries extend stronger legal protection to shareholders and investors (La Porta et al., 1998). So those banks located in civil law countries (i.e., weaker legal protection) cope with a potential problem of investors’ expropriation using substitute mechanisms of corporate governance such as the board. As a consequence, legal systems will be highly correlated with board design (Gillette, Noe and Rebello, 2008). Therefore, we hypothesize:

**H2**

Banks whose parent company is located in countries with weak investors protection may benefit from boards with a stronger monitoring role, which will result in larger and more independent boards.

Ownership concentration is also understood as a governance mechanism that can substitute for a board’s monitoring role and define a board’s composition. When a blockholder is present with the firm, the board is generally composed of fewer directors to diminish decision-making costs (Kieschnick and Moussawi, 2004). However, with regard to the percentage of outsiders, previous evidence is not conclusive. On the one hand, in nonfinancial firms, blockholders often improve the board and encourage its advisory role by supporting the inclusion of outsiders on the boards (Bathala and Rao, 1995; Kieschnick and Moussawi, 2004), especially when the blockholder is an institutional investor (Nielsen, 2008). On the other hand, the scarce literature on banking boards shows that blockholders substitute the board monitoring role by reducing not only the number of directors but also the percentage of outsiders (Belkhir, 2009). Following these arguments, we hypothesize:

**H3**

Banks with concentrated ownership do not require a monitoring board, and thus, they may benefit from a smaller and less independent board.

In addition to the substitution effects of alternative governance mechanisms, the configuration of a monitoring board depends on the monitoring costs. When monitoring costs increase, boards will reduce their monitoring role, which leads to a reduction of their size and independence (Raheja, 2005). Thus, monitoring costs, which increase with the entity’s risk and growth, have a negative impact on the size of the board (Boone et al., 2007; Guest, 2008; Linck, Netter and Yang, 2008) and on outsider proportion (Boone et al., 2007; Kim, Kitsabunnarat and Nofsinger, 2007; Guest, 2008; Linck, Netter and Yang, 2008). No specific literature exists on monitoring costs in banks; however, our previous arguments are appropriate for the banking industry. As a result, we hypothesize:

**H4**

Banks with higher growth opportunities or risks have higher monitoring costs, which results in smaller and less independent boards.

### 3. Research Method

We examine our hypotheses for a sample of 73 listed commercial banks from seven Organisation for Economic Co-operation and Development countries during the period from 1996 to 2006 comprising 651 bank-year observations. This unbalanced panel of data represents 32.2% of the total number of banks but about 80% of banking assets and equity of the seven countries.

Board data to build the panel are mainly obtained from Spencer&Stuart database. We obtain complementary information on boards from banks’ websites. Additionally, we use the Compustat database to obtain financial statements of banks from 1996 to 2006. Finally, we use Bankscope and Thomson One Banker to obtain full data about ownership structure.

The panel data include banks from three common-law countries (Canada, the United Kingdom, and the United States) and four from civil law countries (France, Italy, Netherlands, and Spain). All of these countries are developed nations with well-functioning legal and institutional environments. All of the banks have a one-tier board structure, except the French system, which offers corporations the choice of one-tier or two-tier boards. Our sample includes only the banks that opt for one tier.

#### 3.1. Variables and Statistics

Table 1 presents a general description of our sample and variables. We measure board size and independence as the number of total directors (BOARD SIZE) and the percentage of outsiders (BOARD OUTSIDERS), respectively. According to our data, boards of banking entities are composed, on average, of 16 directors (80%) who are mostly outsiders. These figures
<table>
<thead>
<tr>
<th>Dependent variables</th>
<th>Definition</th>
<th>Variable</th>
<th>Size</th>
<th>Independence</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board size</td>
<td>Total number of directors</td>
<td>BOARD SIZE</td>
<td>—</td>
<td>—</td>
<td>15.690</td>
<td>4.412</td>
<td>6.000</td>
<td>32.000</td>
</tr>
<tr>
<td>Board independence</td>
<td>Percentage of board seats held by outsiders</td>
<td>BOARD OUTSIDERS</td>
<td>—</td>
<td>—</td>
<td>0.797</td>
<td>0.149</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Independent variables for the board’s advisory role</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size of bank</td>
<td>Total assets, in logarithm</td>
<td>ASSETS</td>
<td>Positive</td>
<td>Positive</td>
<td>11.400</td>
<td>1.427</td>
<td>4.378</td>
<td>14.222</td>
</tr>
<tr>
<td>Age of the bank</td>
<td>Number of years since the bank was constituted, in logarithm</td>
<td>AGE</td>
<td>Positive</td>
<td>Positive</td>
<td>4.205</td>
<td>1.197</td>
<td>0.000</td>
<td>6.280</td>
</tr>
<tr>
<td>Leverage</td>
<td>Liabilities-to-total assets ratio</td>
<td>LEVERAGE</td>
<td>Positive</td>
<td>Positive</td>
<td>0.927</td>
<td>0.049</td>
<td>0.052</td>
<td>0.981</td>
</tr>
<tr>
<td>Activity diversification</td>
<td>Squared of fraction of operating activity derived from the loans plus squared of fraction of operating activity derived from deposits</td>
<td>DIVERSIFICATION</td>
<td>Positive</td>
<td>Positive</td>
<td>0.482</td>
<td>0.056</td>
<td>0.000</td>
<td>0.500</td>
</tr>
<tr>
<td>Independent variables for the board’s monitoring role (substitution effect and monitoring costs)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Substitution effect</td>
<td></td>
<td>CIVIL</td>
<td>Positive</td>
<td>Positive</td>
<td>0.382</td>
<td>0.486</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Legal tradition of the country</td>
<td>Dummy variable that equals 1 if it is a civil law country, and zero otherwise</td>
<td>OWNERSHIP</td>
<td>Negative</td>
<td>Negative</td>
<td>12.840</td>
<td>18.533</td>
<td>0.000</td>
<td>100.000</td>
</tr>
<tr>
<td>Ownership concentration</td>
<td>Percentage of ownership that is in hands of the major shareholder</td>
<td>Q</td>
<td>Negative</td>
<td>Negative</td>
<td>2.844</td>
<td>2.386</td>
<td>0.000</td>
<td>34.780</td>
</tr>
<tr>
<td>Monitoring costs</td>
<td></td>
<td>Q</td>
<td>Negative</td>
<td>Negative</td>
<td>2.844</td>
<td>2.386</td>
<td>0.000</td>
<td>34.780</td>
</tr>
<tr>
<td>Growth of the bank</td>
<td>Book value of total assets minus the book value of common equity plus the market value of common equity divided by the book value of total assets</td>
<td>Q</td>
<td>Negative</td>
<td>Negative</td>
<td>2.844</td>
<td>2.386</td>
<td>0.000</td>
<td>34.780</td>
</tr>
<tr>
<td>Risk of the bank</td>
<td>Return on assets plus equity-to-total assets ratio divided by the standard deviation of the return on assets (z-score). Higher z-score indicates lower risk.</td>
<td>RISK</td>
<td>Negative</td>
<td>Negative</td>
<td>5.369</td>
<td>4.348</td>
<td>−2.742</td>
<td>34.578</td>
</tr>
<tr>
<td>Control variables</td>
<td></td>
<td>ROE</td>
<td>—</td>
<td>—</td>
<td>15.015</td>
<td>10.467</td>
<td>−171.373</td>
<td>51.532</td>
</tr>
<tr>
<td>Return on equity</td>
<td>Returns-to-total equity ratio (%)</td>
<td>MERGER</td>
<td>—</td>
<td>—</td>
<td>0.142</td>
<td>0.349</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Merger</td>
<td>Dummy variable that equals 1 if there is a bank merger, and zero otherwise</td>
<td>CODE</td>
<td>—</td>
<td>—</td>
<td>0.281</td>
<td>0.450</td>
<td>0.000</td>
<td>1.000</td>
</tr>
<tr>
<td>Code of good governance</td>
<td>Dummy variable equals 1 if that year there is a new code of good governance in the country of the bank’s parent company, and zero otherwise</td>
<td>CODE</td>
<td>—</td>
<td>—</td>
<td>0.281</td>
<td>0.450</td>
<td>0.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>
because it allows us to consider the unobservable
is the most ef-
cross-sectional data from 73 banks. Panel data analysis
and Spain; and one in Italy and the Netherlands.
United States; three in France; two in Canada, England,
good governance between 1996 and 2006: four in the
country of our sample published at least one code of
the banks underwent a merger. In addition, every
data, the mean of the return on equity is about
parent company is located (CODE). According to
–
Our sample includes time series (1996
–
2006) and 18 (Adams and Mehran, 2008) and independ-
dependence between 70% (Adams and Mehran, 2008) and
80% (Belkhir, 2009).

We define the size and complexity of bank activity
with three variables related to the bank’s volume of
assets (ASSETS), age (AGE), liabilities-to-total assets
ratio (LEVERAGE), and diversification of activities
(DIVERSIFICATION). The diversification is mea-
ure in terms of deposits and loans following that of
Pathan and Scully (2010) and Stiroh and Rumble
(2006). The banks in our sample handle an average
volume of assets of US$192 billion, and their
leverage is above 93% (including deposits as debt).

We use a dummy variable to identify the legal tradi-
tion of the country in which the bank’s parent company
is located (CIVIL), and we measure ownership concen-
tration as the percentage of equity in hands of the major
shareholder (OWNERSHIP). According to our data, a
major shareholder owns close to 13% of the bank
equity. We also include two variables that are related
to monitoring costs of the board: the bank’s growth op-
opportunities, proxied by the firm’s market-to-book value
ratio (Q), and its risk (RISK), measured using z-score
ratio (Laeven and Levine, 2009; Beck, Demirgüç-Kunt
and Levine, 2010). We observe that on average, market
value is about three times the book value of banks and
the mean of the risk (higher z-score indicates lower
risk) is above 5.

Finally, we incorporate three control variables
concerning return on equity (ROE), the bank’s merger
activity (MERGER), and the publish year of a code of
good governance in the country in which the bank’s
parent company is located (CODE). According to
our data, the mean of the return on equity is about
15%, and throughout the years of our study, 14% of
the banks underwent a merger. In addition, every
country of our sample published at least one code of
good governance between 1996 and 2006: four in the
United States; three in France; two in Canada, England,
and Spain; and one in Italy and the Netherlands.

3.2. Econometric Model

Our sample includes time series (1996–2006) and
cross-sectional data from 73 banks. Panel data analysis
is the most efficient tool to analyze this kind of sample
because it allows us to consider the unobservable
and constant heterogeneity of each bank (e.g., the
management quality and style, market perception, busi-
ness strategy). Also, as our dependent variable may be
simultaneously determined with some of the indepen-
dent variables (e.g., market-to-book ratio, volume of
assets), we need to use an econometric method that
can deal with endogeneity as well as with the unobserv-
able fixed effects of each commercial bank. We over-
come this econometric challenge using a general
method of moments (GMM), which allows us to build
instruments for those variables that are potentially
endogenous.

Thus, we use the two-step system estimator with ad-
justed standard errors for potential heteroskedasticity
proposed by Arellano and Bover (1995) and Blundell
and Bond (1998). This econometric method considers
the unobserved effect that transforms the variables into
first differences and uses GMM to deal with endogene-
ity problems. Those differences are reflected in the
quality of the instruments involved (Levine, Loayza
and Beck, 2000). Specifically, the lagged values (in
our case, the dependent variables) frequently involve
weak instruments for the prediction of changes in the
board size and independence. The existence of weak
instruments can lead to poor asymptotic precision in fi-
nite samples (Alonso-Borrego and Arellano, 1999).

Therefore, in our econometric models, we use an
estimator that lessens this problem, substituting the
specification in differences with the original regression
specified in levels similar to the system estimator
(Blundell and Bond, 1998; Huang and Ritter, 2009;
Öztekin and Flannery, 2009). Performing the model in
that way, the system estimator involves two kinds of
equations, each containing their own instruments. The
first category of equations is in levels, and its instru-
ments are the lagged differences in the dependent variable and
the independent variables. The second category of equa-
tions consists of equations in first differences and uses
the levels of the dependent variable and the independent
variables as instruments (Arellano and Bond, 1998;
Goergen and Renneboog, 2001; Wooldrigde, 2002).
For our case, using the GMM, we build instruments for
those variables that are potentially endogenous.

To test the validity of our model specifications, we
calculate the Hansen test of overidentifi-
cation of restrictions. This test examines the lack of correlation
between the instruments and the error term. The AR1
and AR2 statistics measure first-order and second-order
serial correlation. Given the use of first-difference trans-
formations, we expect some degree of first-order serial
correlation, although this correlation does not invali-
date our results. However, the presence of second-order
serial correlation does signal omitted variables. We also

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compute the Wald test of joint significance for all independent variables. In addition, we use the adjustment for small samples suggested by Windmeijer (2005). Because our sample size is not very large, the Windmeijer proposal improves the robustness of our results and avoids any potential downward bias in the estimated asymptotic standard errors.

We develop two empirical models to evaluate board composition: one for explaining board size and the other for explaining board independence. The independent variables are bank size (ASSETS), age of the bank (AGE), percentage of liabilities (LEVERAGE), the bank’s activity diversification (DIVERSIFICATION), the country’s legal tradition (CIVIL), ownership concentration (OWNERSHIP), market-to-book ratio (Q), bank risk (RISK), and three control variables (ROE, MERGER, and CODE). Analytically, the regression Model (1) with the board size is

$$
\text{BOARD SIZE}_{it} = \beta_0 + \beta_1 \text{ASSETS}_{it} + \beta_2 \text{AGE}_{it} + \beta_3 \text{LEVERAGE}_{it} + \beta_4 \text{DIVERSIFICATION}_{it} + \beta_5 \text{OWNERSHIP}_{it} + \beta_6 \text{Q}_{it} + \beta_7 \text{RISK}_{it} + \beta_8 \text{CODE}_{it} + \beta_9 \text{YEAR}_{it} + \epsilon_{it}
$$

(1)

The regression Model (2) with the board independence is

$$
\text{BOARD OUTSIDERS}_{it} = \beta_0 + \beta_1 \text{ASSETS}_{it} + \beta_2 \text{AGE}_{it} + \beta_3 \text{LEVERAGE}_{it} + \beta_4 \text{DIVERSIFICATION}_{it} + \beta_5 \text{OWNERSHIP}_{it} + \beta_6 \text{Q}_{it} + \beta_7 \text{RISK}_{it} + \beta_8 \text{CODE}_{it} + \beta_9 \text{MERGER}_{it} + \beta_{10} \text{YEAR}_{it} + \epsilon_{it}
$$

(2)

4. EMPIRICAL RESULTS

Table 2 provides the estimations of the Models (1) and (2). As we expected, banks’ advisory needs are directly related to their scope of operations—but only when they are proxied by the banks’ size. As Table 2 shows, as the bank increases in size (ASSETS), the board size and independence also increases. These results are in line with those obtained by previous authors for different samples (i.e., Denis and Sarin, 1999; Baker and Gompers, 2003; Boone et al., 2007; Coles, Daniel and Naveen, 2008; Guest, 2008; Linck, Netter and Yang, 2008; Lehn, Patro and Zhao, 2009). These finding corroborates the notion that banks with higher asset volume require a board that can support the CEO in his or her decision making. These boards therefore increase the number of members—especially outside members—of their boards to provide more information and expertise in guiding and defining the bank’s future strategies. The scarce literature on financial entities also shows this effect (Adams and Mehran, 2008; Belkhir, 2009; Pathan and Skully, 2010). Conversely, none of the other variables related to the bank’s complexity (AGE, LEVERAGE, and DIVERSIFICATION) show a significant effect on the boards’ size or independence.

Regarding the monitoring role of the board, we analyze both the monitoring costs linked to the bank’s growth and risk and the substitution effect of an alternative supervising mechanism. The influence of the monitoring costs (Q) in the board composition is significant only when we are referring to the board’s independence. Following the results obtained by Denis and Sarin (1999), Lehn, Patro and Zhao (2009), and Linck, Netter and Yang (2008), among others, we observe that higher monitoring costs, related to the entity’s higher growth options, result in a less independent board to reduce the functioning costs of their governance mechanism and to speed up their decision-making process.

With regard to the substitution effect, we find that those banks whose parent company is located in a country with low legal protection of shareholders’ rights (CIVIL) need the board to safeguard shareholders’ interest, at least in terms of the board’s independence. Our results also suggest that ownership concentration (OWNERSHIP) is negatively related to the bank’s need for the board to undertake a monitoring role, although, at least in the basic models, these effects are not significant. These outcomes, however, are not new in literature as prior studies have found the sign of the effect of ownership structure on board composition elusive at best.

Two control variables, MERGER and CODE, have an important influence on the board size and independence. Whenever the bank goes through a merger process, the number of board members increases but mainly by maintaining the insiders of the companies that are being joined together. In addition, when a code of good governance is published, bank boards attempt to adjust their board composition to the code recommendations; following the last round of good governance codes, boards moved to considerably reduce their size and increase their independence.

We expand our analysis by using interacted variables to identify the nonlinear effect of the ownership concentration and the predominant effect when two different governance mechanisms collide.

Some previous authors have identified a nonlinear relation between ownership concentration and board
As we previously described, at the lower levels of ownership concentration, it can act as a substitute for the managerial team and the main shareholder. Therefore, when ownership concentration serves as a substitute, monitoring, but this mechanism is more important in common-law countries than in civil law ones. govern the amount of bank’s activity diversification; CIVIL is the dummy variable to identify the legal tradition of the country; OWNERSHIP is the percentage of equity in hands of the major shareholder; Q is the market-to-book value ratio; RISK is the z-score ratio; ROE is the returns on equity ratio; MERGER is the dummy variable to identify a bank’s merger; CODE is the dummy variable to identify a publish year of a code of good governance in the country. The Wald test is a contrast of the null hypothesis of all the coefficients except the constant term. AR2 is a test for the absence of second-order serial correlation. The Hansen test indicates the validity of the instruments. ***, **, and * indicate a confidence level of above 99%, above 95%, and above 90%, respectively.

On the one hand, the coefficient of the interactive variable CIVIL*OWNERSHIP refers to the incremental effect of ownership concentration on those banks whose parent company is located in a country with a civil legal tradition compared with the reference group of banks whose parent company is located in a country with a common legal tradition. Our results show that the effect of the ownership concentration on the board size is negative, and this effect is stronger in the common-law countries (the OWNERSHIP coefficient is $-0.380$) than in the civil law ones (the coefficient of OWNERSHIP in civil law tradition is $-0.380 + 0.331 = -0.049$). The t1 test (4.47) allows us reject the null hypothesis that the sum of the coefficients of the interactive variable (CIVIL*OWNERSHIP) and the noninteractive one (OWNERSHIP) is zero. This result evidences the fact that the ownership concentration serves as a substitute governance mechanism for the board of directors in monitoring, but this mechanism is more important in common-law countries than in civil law ones.

This result is not surprising, but it complements our findings for the variable SQUARED OWNERSHIP. As we previously described, at the lower levels of ownership concentration, it can act as a substitute for governance in the country. The Wald test is a contrast of the null hypothesis of all coefficients except the constant term. AR2 is a test for the presence of second-order serial correlation. The Hansen test indicates the validity of the instruments. ***, **, and * indicate a confidence level of above 99%, above 95%, and above 90%, respectively.

Table 2. Models (1) and (2) for the Determinants of Board Size

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>BOARD SIZE</th>
<th>BOARD INDEPENDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSETS 1.344* (0.719)</td>
<td>0.056* (0.031)</td>
<td></td>
</tr>
<tr>
<td>AGE $-0.386$ (0.914)</td>
<td>$-0.012$ (0.017)</td>
<td></td>
</tr>
<tr>
<td>LEVERAGE 48.524 (45.060)</td>
<td>0.164 (1.244)</td>
<td></td>
</tr>
<tr>
<td>DIVERSIFICATION $-9.050$ (6.174)</td>
<td>0.153 (0.447)</td>
<td></td>
</tr>
<tr>
<td>CIVIL $-6.357$ (5.013)</td>
<td>0.181 (0.087)</td>
<td></td>
</tr>
<tr>
<td>OWNERSHIP $-0.034$ (0.047)</td>
<td>$-0.001$ (0.003)</td>
<td></td>
</tr>
<tr>
<td>Q $0.004$ (0.081)</td>
<td>$-0.005$ (0.003)</td>
<td></td>
</tr>
<tr>
<td>RISK $-0.515$ (0.589)</td>
<td>$0.008$ (0.019)</td>
<td></td>
</tr>
<tr>
<td>ROE $0.022$ (0.061)</td>
<td>$-0.001$ (0.004)</td>
<td></td>
</tr>
<tr>
<td>MERGER 1.173* (0.556)</td>
<td>$-0.077$* (0.045)</td>
<td></td>
</tr>
<tr>
<td>CODE $-0.778***$ (0.312)</td>
<td>0.024* (0.014)</td>
<td></td>
</tr>
<tr>
<td>CONS $-32.564$ (38.478)</td>
<td>$-0.078$ (1.108)</td>
<td></td>
</tr>
<tr>
<td>YEAR Included</td>
<td>Included</td>
<td></td>
</tr>
<tr>
<td>No. of observations (groups) 640 (73)</td>
<td>640 (73)</td>
<td></td>
</tr>
<tr>
<td>Wald test (p-value) 59.78 (0.000)</td>
<td>50.89 (0.000)</td>
<td></td>
</tr>
<tr>
<td>AR2 $-0.17$ (0.862)</td>
<td>1.40 (0.163)</td>
<td></td>
</tr>
<tr>
<td>Hansen test 32.564 (38.478)</td>
<td>34.01 (0.467)</td>
<td></td>
</tr>
</tbody>
</table>

The table presents our coefficients and standard errors (in parentheses) of the hypotheses’ estimations, using generalized method of moments in two steps. BOARD SIZE is the number of total directors; BOARD INDEPENDENCE is the percentage of outsiders; ASSETS is the volume of assets (in logarithm); AGE is the year of bank’s creation; LEVERAGE is the liabilities-to-total assets ratio; DIVERSIFICATION is the bank’s activity diversification; CIVIL is the dummy variable to identify the legal tradition of the country; OWNERSHIP is the percentage of equity in hands of the major shareholder; Q is the market-to-book value ratio; RISK is the z-score ratio; ROE is the returns on equity ratio; MERGER is the dummy variable to identify a bank’s merger; CODE is the dummy variable to identify a publish year of a code of good governance in the country. The Wald test is a contrast of the null hypothesis of all the coefficients except the constant term. AR2 is a test for the presence of second-order serial correlation. The Hansen test indicates the validity of the instruments. ***, **, and * indicate a confidence level of above 99%, above 95%, and above 90%, respectively.

The coefficient of the linear term for board size (OWNERSHIP) shows a significant and negative sign, whereas the coefficient on the quadratic term (SQUARED OWNERSHIP) is positive and significant at the 5% confidence level. This result supports the notion that although the ownership monitoring role increases as more shares are accumulated by the main shareholder, at a certain level of ownership concentration, the potential expropriation on other stakeholders, especially depositors, may outweigh the benefits of the large shareholder. Therefore, when ownership concentration is excessively high, the board can avoid potential expropriation by adding more members to monitor both the managerial team and the main shareholder.

Regarding the interactive effect between governance mechanism, we include the variables CIVIL*OWNERSHIP and MERGER*OWNERSHIP. Our results, shown in Table 3, maintain the same signs of the basic models, although some of the variables lose their significance as the new variables we include absorb most of the explicative power of the model. So we find that board size is negatively related to ownership concentration (OWNERSHIP), which supports the arguments of the substitution effect of alternative governance mechanisms. Also, the coefficients of the interactive variables are significant and require a distinct explanation.
Table 3. Models (1) and (2) Including Squared and Interacted Variables

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>BOARD SIZE</th>
<th>BOARD INDEPENDENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSETS</td>
<td>1.814**</td>
<td>0.571 (0.886)</td>
</tr>
<tr>
<td>AGE</td>
<td>-0.512 (0.662)</td>
<td>-0.711 (0.665)</td>
</tr>
<tr>
<td>LEVERAGE</td>
<td>40.875 (43.044)</td>
<td>16.940 (21.826)</td>
</tr>
<tr>
<td>DIVERSIFICATION</td>
<td>-7.065 (7.554)</td>
<td>4.678 (6.922)</td>
</tr>
<tr>
<td>CIVIL</td>
<td>-1.605 (4.962)</td>
<td>---</td>
</tr>
<tr>
<td>OWNERSHIP</td>
<td>-0.306** (0.136)</td>
<td>-0.380** (0.176)</td>
</tr>
<tr>
<td>CIVIL*OWNERSHIP</td>
<td>---</td>
<td>0.331** (0.162)</td>
</tr>
<tr>
<td>MERGER*OWNERSHIP</td>
<td>0.003** (0.001)</td>
<td>0.122*** (0.043)</td>
</tr>
<tr>
<td>Q</td>
<td>0.042 (0.129)</td>
<td>-0.074 (0.073)</td>
</tr>
<tr>
<td>RISK</td>
<td>-0.223 (0.438)</td>
<td>0.288 (0.346)</td>
</tr>
<tr>
<td>ROE</td>
<td>-0.004 (0.037)</td>
<td>-0.025 (0.051)</td>
</tr>
<tr>
<td>MERGER</td>
<td>1.045* (0.536)</td>
<td>1.297*** (0.445)</td>
</tr>
<tr>
<td>CODE</td>
<td>-0.575* (0.357)</td>
<td>-0.244 (0.225)</td>
</tr>
<tr>
<td>CONS</td>
<td>-32.602 (0.390)</td>
<td>-5.216 (25.448)</td>
</tr>
<tr>
<td>YEAR</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>No. of observations (groups)</td>
<td>640 (73)</td>
<td>640 (73)</td>
</tr>
<tr>
<td>t1</td>
<td>4.47</td>
<td>4.7</td>
</tr>
<tr>
<td>t2</td>
<td>56.42 (0.000)</td>
<td>89.37 (0.000)</td>
</tr>
<tr>
<td>Wald test (p-value)</td>
<td>-0.40 (0.688)</td>
<td>-0.39 (0.694)</td>
</tr>
<tr>
<td>AR2</td>
<td>36.52 (0.309)</td>
<td>48.19 (0.271)</td>
</tr>
</tbody>
</table>

The table presents our coefficients and standard errors (in parentheses) of the hypotheses' estimations, using generalized method of moments in two steps. BOARD SIZE is the number of total directors; BOARD INDEPENDENCE is the percentage of outsiders; ASSETS is the volume of assets (in logarithm); AGE is the year of bank's creation; LEVERAGE is the liabilities-to-total assets ratio; DIVERSIFICATION is the bank's activity diversification; CIVIL is the dummy variable to identify the legal tradition of the country; OWNERSHIP is the percentage of equity in hands of the major shareholder; Q is the market-to-book value ratio; RISK is the z-score ratio; ROE is the returns on equity ratio; MERGER is the dummy variable to identify a bank's merger; CODE is the dummy variable to identify a publish year of a code of good governance in the country. The t_i is the test that contrast the null hypothesis that the sum of the coefficients of the interactive variable (CIVIL*OWNERSHIP; MERGER*OWNERSHIP) and the noninteractive one (OWNERSHIP) is zero. The Wald test is a contrast of the null hypothesis of all the coefficients except the constant term. AR2 is a test for the absence of second-order serial correlation. The Hansen test indicates the validity of the instruments. ***, **, and * indicate a confidence level of above 99%, above 95%, and above 90%, respectively.
monitoring mechanism for the board, but we have also observed that this effect turns into its opposite at the higher levels of ownership concentration. So, the substitution effect between board and ownership concentration is especially evidenced in common law countries—where the level of ownership concentration is lower—and it loses part of its significance in civil law countries where the levels of ownership concentration are generally higher.

On the other hand, the coefficient of the MERGER*OWNERSHIP variable corresponds to the incremental effect of ownership concentration on those banks that go through a merger compared with the reference group of nonmerged banks. According to our results, for those banks that undergo a merger process, the link between ownership concentration and board size is positive (the OWNERSHIP coefficient for these banks is 0.048 (−0.074 + 0.122) and its t2 test (6.18) allows us to reject the null hypothesis that the sum of the coefficients of the interactive variable (MERGER*OWNERSHIP) and the noninteractive one (OWNERSHIP) is zero). Thus, even though the presence of a blockholder decreases the need for a large monitoring board (the coefficient of OWNERSHIP variable is −0.074), when two banks with large blockholders merge, the number of board members will increase. In other words, the effect of the merger, which increases the size of the board, prevails over the substitution effect of the ownership concentration, which decreases the size of the board.

5. CONCLUSIONS

As Cooke (2002) suggested, when investors scour the globe for potentially lucrative investments, they also look for transparency and disclosure of financial information, and nations lacking good corporate governance practices are less likely to attract foreign investment. Among good corporate practices, an optimal board composition to both monitor and advise the managerial team is a signal of reliance for potential investors. However, the optimal composition of a board remains an open question.

Although considerable research has addressed the influence of the board composition on the firm’s and bank’s performance, which has been used as a base for the recommendations included in the codes of good practices, none of these results have proven absolutely conclusive. The most recent research on board composition suggests that a single optimal structure cannot be made to fit every organization: Each entity, depending on its characteristics and environment, may need a different board.

In line with these arguments, we reanalyze the board composition of banks. We use an international sample of financial entities to explore how the composition of the board of directors is related to the entity’s characteristics and its legal framework. Our results corroborate that board composition is endogenously determined. Specifically, we find that board size and independence are higher when the advisory or monitoring needs of the bank increase. We find support for the advisory dimension of the board when looking at the board composition of the larger banks. Also, we show that a substitution effect of alternative governance mechanisms (concentrated ownership, merger, legal protection of shareholders’ rights, and board of directors) exists, especially when we study the effect of ownership concentration by including quadratic specifications or interacted variables. Finally, we find support for a negative effect of the monitoring costs on the boards’ independence.

All these results suggest the impossibility of defining a model of optimal board for every banking entity. If we consider the firm and country characteristics to design an efficient board for a bank, then we obtain a different model of board for each entity. In this line of arguments, our study shows the potential dangers derived from the direct application of the recommendations included in the codes of good practices without considering the specific characteristics of the entity and the environment in which it operates. However, as we observe from our data, despite what may serve their best interests, banks adapt their boards’ composition to new codes of governance by reducing the number of insiders that compose the board without taking into account the entity’s idiosyncrasies.

We draw two main conclusions from this study. First, previous literature about the relation between board composition and firm/bank performance needs to be reappraised. The nonconclusive results regarding the effect of board’s effectiveness on bank value can be derived from the endogenously structured board of directors. Second, public recommendations about governance need to be reexamined. How can a code of governance that is defined in generic terms be effectively applied when each entity has a unique definition of an optimal board? In light of our results, applying the codes of good governance with no consideration of the characteristics of the entity or its environment does not seem advisable. For example, the costs of increasing the independence of a board could greatly exceed its benefits when the entity’s monitoring or
advising needs are reduced. Also, advocates of small boards may be undervaluing the informational advantage derived from adding more directors, especially if the entity is quite large and complex but easy to monitor.

Our findings suggest several possible avenues for future research. For instance, the analysis of the importance of a board’s ability to adapt for bank survival is of particular interest during a period of economic recession. To survive, many banking entities are undergoing a merger process or seeking public financial funding to obtain liquidity. Banks that survive could be compared with those banks that become extinct (via bankruptcy or takeover) or that have received public funds. If the comparison does not produce analogous results, we may infer that boards’ adaptation is necessary to survive in competitive markets. Also, as previously argued, the literature about corporate governance in financial entities needs to be reappraised to give entrance not only to the endogeneity problem in board composition but also to the dual role of the board as advisor and monitor for the managerial team.

REFERENCES


