

## **Conformance and performance roles of bank boards: The connection between non-performing loans and non-performing directorships**

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**Abstract:** This study evaluates how non-performing loans and different types of board turnover—which we link to performing directorship (natural turnover) and non-performing directorship (forced turnover)—impact the economic performance (ROA) of banks. The proposed model and hypotheses, based on the conformance and performance roles of boards, are tested on a rich sample that includes all banking firms operating in Costa Rica between 2000 and 2012. The results indicate that the negative effect of non-performing loans on ROA is significantly greater in banks with non-performing directorship associated with high rates of unexpected changes in the board. The findings of this study highlight the importance of balancing financial and non-financial goals if superior governance and economic performance are the objectives pursued by organisations.

**Keywords:** Board of directors, board turnover, banks, performance, non-performing loans, non-performing directorship

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## **Conformance and performance roles of bank boards: The connection between non-performing loans and non-performing directorships**

### **1. Introduction**

Financial firms have long used their non-performing loan (NPL) ratio as an indicator of performance (e.g., Barros, Managi, & Matousek, 2012; Epure & Lafuente, 2015; Goddard, Molyneux, & Wilson, 2001). The level of outstanding loans as a proportion of overall loans, considered as 'non-performing' once they have reached anywhere from three months overdue (Epure & Lafuente, 2015), is viewed as an indicator of the lending performance of a financial institution's loan portfolio. This NPL ratio has been found to be negatively correlated with the economic performance of banks (Barros et al., 2012). As a result, many, if not most banking firms integrate low NPL ratios as part of their corporate performance goals (Van Hoose, 2010).

The use of NPL ratios within corporate performance objectives, and consequently as a common management control instrument within the financial sector, has been found to have repercussions in the way banks formulate their lending policy (Shrieves & Dahl, 2003). Efforts to maintain low NPL ratios have led the boards and executive managements of many banks to favour low-risk lending policies (Acharya, Hasan, & Saunders, 2006; Zhang et al., 2016).

However, financial economic theory says that a diverse portfolio generates greatest returns in the long-run (Acharya et al., 2006). The trade-off that financial institutions are making by adopting low NPL ratio objectives is that they are skewing their portfolios with low-risk-low-interest lending and forgoing high-risk-high-interest opportunities (Goddard et al., 2001; Sapienza, 2002).

This skewness may be a sub-optimal scenario, especially in a context requiring economic growth. Low-risk-low-interest lending policies are more compatible with economic perpetuation rather than growth. Such a conservative lending strategy is not associated with strong entrepreneurial development, churn or economic drive within an economy (Pascali, 2016). It is also unlikely to stimulate much growth in those economies most in need of improving their competitiveness (King & Levine, 1993; Burgees & Pande, 2005; Schumpeter, 1934).

The resulting financial market failure for high-risk credit is often filled by publicly subsidised lending or guarantee schemes (Zang et al., 2016). These arrangements either lower the risk or subsidise the interest cost so that banks driven by their low NPL ratio objectives can, nonetheless, supply credit to more entrepreneurial and disruptive ventures (King & Levine, 1993). However, building on Jensen and Meckling (1976) a sizable body of research has associated such policy with moral hazard (e.g., Boyd & De Nicolo, 2005; Zhang et al., 2016).

Public intervention is viewed as more desirable and less disruptive when aimed towards deposit insurance systems rather than the supply of credit (Allen et al., 2005, 2018).

Non-performing loans are an unintended consequence of banks' credit activity, but we argue that the potentially negative impact of these operations will dilute in the presence of a performing bank directorship that naturally aims for the optimum NPL ratios and promotes the primary roles of boards: conformance and performance (Garratt, 2010).

In such a scenario, there would be no need to artificially pursue low NPL ratios by adopting NPL-related objectives. Instead, banks with a performing directorship—i.e., a board not exposed to unexpected (forced) turnovers that may affect its functioning—will arguably enjoy better management and control systems that will mitigate the negative relationship between NPL and performance (Hambrick & D'Aveni, 1992).

The study presented in this paper therefore proposes and empirically tests whether performing boards—i.e., those reporting natural turnovers—are conducive to performance, and whether the negative effect of NPL ratios are more pronounced in banks afflicted with non-performing directorships (NPD), in terms of forced turnovers within the board of directors.

A performant board, that is free of turbulence and undesired churn, is argued to be more apt to confront the added complexities of guiding the organisation towards an optimal risk configuration—which tolerates and efficiently manages certain levels of non-performing loans—leading to maximum returns. Such a competent board can better balance the conformance versus performance dyad that represents the generic dimensions of organisational governance.

The empirical application uses a rich dataset for all Costa Rican financial institutions operating in the industry between 2000 and 2012. The detailed data provided by the Costa Rican Central Bank includes financial figures as well as detailed organisational information related to changes in the board of directors. More concretely, data available allows us to measure the key financial-related variables used in this study, namely return on assets (ROA) measured as the net profit divided by total assets, and the rate of non-performing loans (NPL) defined as the loans past due 90 days divided by total loans.

Additionally, our data permits us to distinguish different types of board turnovers based on the directors' departure date. Turnover refers to the percentage of directors that left the position in the reference period. We use the data regarding the exact contract termination date to differentiate between natural turnover of board members (performing directorship, PD) and forced turnover (non-performing directorships, NPD).<sup>1</sup>

Instead of analysing the canonical relationship between NPL and economic performance (ROA), our analysis extends the existing literature on boards by evaluating how changes in the

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<sup>1</sup> Note that the boards of Costa Rican banks are fully independent, that is, the regulatory framework imposes that directors cannot vest executive roles in their bank or in any other bank.

board of directors affect performance, and how board turnover resulting from natural variations—which we link to performing directorship (PD)—and forced departures—that we link to non-performing directorship (NPD)—impact the performance of banks.

Additionally, by studying the role of performing and non-performing directorship on performance in a specific industry (i.e., banking) and in a specific context (Costa Rica), our study contributes to the growing stock of empirical studies dealing with boards in emerging economies (e.g., Epure & Lafuente, 2015; Kaymak & Bektas, 2008; Mahadeo, Soobaroyen, & Hanuman, 2012).

## **2. Theoretical and hypotheses development**

From a legalistic theoretical standpoint, control is the predominant function of the board (Vance, 1978). Grounded on the Companies' Act and common law, this view sees a board's primary function as that of controlling and serving the corporation by regulating and monitoring (Chaganti, Mahajan, & Sharma, 1985). For effective control, Koontz (1967) proposed that directors should check on the company's performance ideally before they occur. For successful control under this premise, it is perceived that deviations from plans must be 'fixed' before they happen. This view which puts 'control before results' has not found much empirical support (Bacon 1973; Epstein, 1986; Juran & Loudon, 1966; Koontz, 1967; Loudon, 1982). These studies indicate that directors are generally ineffective at thoroughly evaluating and controlling managers ex-ante. This is true for most industries, but less in the case of the banking sector.

The potential impact of the lack of control over banks was evidenced by the repercussions of the financial crisis that propagated across most western economies after 2008 (Goldstein & Leitner, 2018). Consequently, most governments and industry associations recommended stricter controls over bank executives and their policies (Davis & Obasi, 2009; Zhang et al., 2016). Over the decade that followed, compliance to controls became one of the main functions of boards of most banks (Ingley et al., 2017).

Public intervention, however, has been viewed as more desirable and less disruptive when aimed towards deposit insurance systems rather than the supply of credit (Allen et al., 2005, 2018). As such, public policy has generally chosen to impose constraints linked to deposit guarantee systems, leaving greater flexibility for bank to govern their own supply of credit (Allen et al., 2018). The conformance role of the directorships of banks has centred mostly on controls over internal governance and lending policies.

Long before a legalistic view of the function of bank boards, many researchers had looked into the function of the board and its governance from an agency approach (Berle & Means, 1932; Davis, Schoorman, & Donaldson, 1997). The proponents of an agency theoretical stance mostly explain board governance through the divergence of interests between owners and

managers, where the board is meant to control and align the executive towards the interest of owners (Adams, Hermalin, & Weisbach, 2010; Rechner & Dalton, 1991).

In contrast, the stewardship stance argues that the executives are generally motivated to act in the best interests of organisations and their owners. Stewardship theorists see the board's role as one that must empower governance structures and mechanisms to maximise the benefits of a steward (Donaldson & Davis, 1991, 1994; Fox & Hamilton, 1994). Thus, in this view, directors should play a greater role in facilitating and empowering managers instead of monitoring and control.

The performance focus of this view is common to the strategic choice theoretical approach, which stresses that the actions undertaken by directors are meant to help the firm adapt to its environment. The ability of the firm in adapting to its environment is argued as the main explanation of the organisational outcomes obtained by the firm (Karoui et al., 2017). Therefore, the role of the board of directors progresses from the mere compliance of legal tasks to those involved with strategy development that promotes performance (Kreiken, 1985).

Much of the literature related to the board governance has come to either defend or contrast any part of the compliance-performance dyad. In an effort to better explain the function of the board of directors, Garratt (2010) proposed a framework model that suggests two main dimensions of a board's role: 'conformance' and 'performance'.

Conformance involves compliance with legal and regulatory requirements and accountability to shareholders or other stakeholders, which is internally manifested through the oversight, monitoring imposition of adequate internal controls (Garratt, 2010). This conformance dimension matches quite closely with the agency theory perspective on governance (Adams et al., 2010). In contrast, the performance dimension is about driving the corporation forward to better achieve its goals (Garratt, 2010). This consists of policy formulation and strategic thinking meant to take the corporation forward. The performance dimension is comparable to the stewardship approach of corporate governance (Donaldson & Davis, 1994). This framework (depicted in Table 1) suggests that boards need to be concerned with both the conformance and the performance dimensions of corporate governance.

----- Insert Table 1 about here -----

Most performance control indicators used by banks are financial in nature. A more accurate analysis should also include some non-financial indicators. As argued by Hilmer and Tricker (1990), the risks of corporate governance are over-emphasised when monitoring is excessively reliant on financial measures. In the case of the banking industry, the level of outstanding loans as a proportion of overall loans, which is commonly termed as non-performing loans ratio

(NPL), has become the dominant standard of lending performance of a financial institution's loan portfolio (Epure & Lafuente, 2015).

The boards of banks adopting a conformance stance use of NPL ratios within corporate performance objectives, and consequently as a common management control instrument that influences the way lending policy is executed (Shrieves & Dahl, 2003). The overuse of NPL ratios, as a dominant control indicator, may lead to greater short-term-sightedness on the part of the board. When NPL controls become the norm, the board can easily lose sight of other, longer-term aspects. Although prior work shows that non-performing credit portfolio is an important predictor of the performance and efficiency levels of banks (e.g., Banker, Chang, & Lee, 2010; Barros et al., 2012; Epure & Lafuente, 2015), we argue that balancing financial and non-financial performance indicators is vital for the successful governance of banks and, subsequently, their performance level in the long run.

The strategic and performance driving functions of the board are much more difficult for the board to effectively carry-out. This is mostly due to the qualitative and future oriented character of the performance enhancing role of the board (Bustinza et al., 2018). Because of the many unknowns related with directing for the future, the complexity of the board's performance role requires effective directorship and a competent board (Derban, Binner, & Mullineux, 2005).

Building on the premises of the friendly board approach (Adams & Ferreira, 2007), only a competent board could effectively install a climate of confidence and open information between the executive and directorship of organisations, which allows boards to better balance the conformance-performance dimensions of governance. A performing directorship can therefore better gauge the compliance dials imposed on the executive in order to better reach optimal performance, even in the face of complexity.

A board that is less competent or is dysfunctional due to internal struggles and conflict will most often turn away from its longer-term obligations towards optimal performance in order to centre its attention on the short-term controls systems that are simpler to monitor (Prowse, 1995). In such a context, those boards of banks afflicted with a dysfunctional or non-performing directorship (NPD) may be less capable of confronting the complexities of a performance orientation. Such a non-performing directorship may therefore be less capable of driving bank performance in the presence of greater NPL ratios. Positive NPL ratios may be more detrimental to banks afflicted with higher NPD levels. Based on this theory and evidence, we therefore hypothesise that:

**H1:** Non-performing loan ratios are negatively associated with economic performance (ROA).

**H2:** The negative relationship between non-performing loans (NPL) and performance (ROA) is stronger among banks whose boards are more afflicted with greater non-performing directorship (NPD), in terms of higher rates of forced turnover.

### 3. Data and Method

#### 3.1 The Costa Rican banking industry

Similar to other developing economies, the Costa Rican government promoted the deregulation of the banking industry seeking to improve monitoring activities as well as to enhance competitiveness (IMF, 2013; Yildirim & Philippatos, 2007). The Costa Rican banking industry has gone through various reforms including, among others, the creation in 1995 of an independent supervisory agent linked to the Costa Rican Central Bank (Superintendent of Financial Entities, SUGEF). The function of this agency is to improve the transparency of financial firms. Another significant reform was the introduction of the CAMELS rating framework in 2001 to further enhance the monitoring of financial firms' activities (IMF, 2003; SUGEF, 2000). A detailed description of the deregulation process of the Costa Rican banking industry is presented in Lafuente and García-Cestona (2007) and Epure and Lafuente (2015).

The SUGEF monitors all types of financial firms in the market, including: state-owned commercial banks, private banks, mutual banks, cooperative banks, financial conglomerates, financial (non-banking) firms, credit unions and currency exchange offices. Nevertheless, for enhanced accuracy and robustness of the analysis, in this paper we focus on those banks that operate under the same market conditions, in terms of regulation: the state-owned commercial banks, private banks, mutual banks and cooperative banks.

There are various characteristics of the Costa Rican banking industry that are worth mentioning. First, the four types of financial firms analysed in this study operate under the same regulatory regime. Financial laws have also introduced transparency mechanisms that facilitate the access to detailed information on financial operations and organisational architecture. Second, regulation restricts the composition of the board of directors, and all board members have to be outsiders; that is, directors cannot hold any position in the financial firm (CEO, top management team, middle managers, or any other position) (Epure & Lafuente, 2015).

Third, in a related manner, from the analysis of the financial law we can obtain relevant information about board composition of Costa Rican banks<sup>2</sup>. More concretely, state-owned banks are fully controlled by the Costa Rican government; however, and according to the law, they are considered independent firms since politicians cannot influence their managerial decisions. Despite their managerial independence from the Central Government, the financial law tells us that boards must have seven members designated by the Council of Ministers for periods different from the Government's term of office. Although these characteristics lead us to

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<sup>2</sup> The *Ley del Sistema Bancario Nacional 1644* of 1953 regulates the board composition of state-owned banks (articles 20th to 37th) and privately-owned banks (articles 144th to 149th). For mutual banks, board composition is regulated in articles 76th to 82nd of the *Ley del Sistema Financiero Nacional de la Vivienda 7052* of 1986. The board composition of cooperative banks is regulated in the articles 46th, 51st, 52nd, 54th and 55th of the *Ley de Asociaciones Cooperativas 4179* of 1968.

suspect that state-owned banks are governed by boards that may serve political interests (e.g., fund specific industries or stimulate the development of depressed areas), state-owned banks—just like the rest of players in the industry—have to meet all the requirements of the regulatory framework (CAMELS) imposed by the supervisory agency (SUGEF). Thus, the pursuit of alternative goals is not necessarily connected to decisions related to changes in the board in a direct way, and this behaviour would only translate in potentially lower economic results (Lafuente et al., 2018).

Concerning the board of private-owned banks, the law indicates that each bank determines the number of board members, being the only legal requirement that the board must have more than five directors. Also note that eight out of the 11 private commercial banks operating in Costa Rica in 2012 are registered in the Costa Rica's stock market; however, the eight banks trade bonds and other securities while only two private banks trade stocks (for details visit: <https://www.bolsacr.com/inversionistas/emisores-que-cotizan-en-bnv>).

Finally, the regulatory regime establishes some legal considerations for the mutual banks and cooperative banks. For mutual banks, their board should have between five and seven non-executive members, and directors must be mutual partners. For cooperative banks, board size is restricted to be an odd number over five members, and board seats are not exclusive for cooperative partners. Similar to the case of state-owned and privately-owned banks, directors of mutual banks and cooperative banks cannot hold a position in any other financial firm.

In conclusion, the Costa Rican financial legislation promotes greater transparency, as well as the separation of decision rights by imposing both the nomination of fully outside boards and a two-tier leadership structure among financial firms.

### *3.2 The sample*

The data used in this study comes from the publicly available datasets of the Costa Rican Central Bank, and includes detailed accounting and organisational information for all financial firms in the industry during the period 2000-2012. Additionally, from our detailed database it is possible to identify—for each director serving in the board of directors of the sampled banks—relevant information related to the contract initiation date and contract expiration date which is used to measure board turnover rates (details are presented in Section 3.3).

As a result of a limited number of business entries and exits reported during the period under analysis, the total number of financial institutions in Costa Rica changed from 47 in 2000 to 41 in 2012. Therefore, the study employs an unbalanced panel that includes information for all state-owned, private, mutual and cooperative banks that operate in the industry. The final sample includes information for 547 firm-year observations.

At this point, as indicated above in Section 3.1, state-owned banks are fully controlled by the Costa Rican government; however, and according to the regulatory framework, they are

considered independent firms since politicians cannot influence their managerial decisions. In terms of market share, this group controlled 54 % of the deposits in 2012. The second group includes private commercial banks. In 2012, this group attracted 29 % of the deposits. The third group is formed by the mutual banks, which in 2012 had 7% of the deposits. Note that, similarly to the state-owned banks, the deposits of mutual banks are guaranteed by the government. The last group consists of cooperative banks. Although these financial firms are owned by their cooperative members, they offer financial services to any type of customer. In 2012 these firms accounted for 10% of the deposits.

### 3.3 Variable definition

*Performance.* In line with prior work on bank performance (e.g., Banker et al., 2010; Hsiao et al., 2010), this study employs an accounting metric to capture the performance of financial firms. More concretely, the rate of return on assets (ROA)—defined as the ratio of net profit divided by total assets—is used to measure the economic performance of financial institutions.

*Non-performing loans (NPL).* In this study, we employ the ratio of non-performing loans (NPL) as a measure of credit risk. This variable (NPL) is expressed as the non-performing loans divided by total loans. Note that, following the regulation set by the SUGEF (SUGEF, 2000), non-performing loans are credit operations—i.e., mortgages, commercial loans or corporate loans—past due for at least 90 days. This variable has been used in prior research on bank performance (e.g., Banker et al., 2010; Barros et al., 2012; Epure & Lafuente, 2015; Zhang et al., 2016). Descriptive statistics for the study variables are presented in Table 2.

----- Insert Table 2 about here -----

*Board turnover.* Concerning changes in the board of directors, we consider the exit rate from the board between two consecutive years ( $t-1$  and  $t$ ). By comparing the names and the contract terms (contract initiation and expiration dates) of board members available from our database, board turnover refers to the percentage of directors of a given board that left the position between two adjacent years during the study period. At this point, two important considerations are in order. First, note that we are interested in clearly identifying and distinguishing those board replacements that are expected to impact performance in the following period from those that are not because of time considerations. Consequently, and similar to the practice in prior corporate governance work (see, e.g., Huson, Parrino, & Starks, 2001; Lafuente & García-Cestona, 2016), we consider that a change in the board corresponds to

a specific period only if this governance intervention took place between the last semester in year  $t-1$  and the first semester in period  $t$ .<sup>3</sup>

Second, and considering that only non-executive directors can sit on the board (Section 3.1), we consider the variation rate in the board for those cases when the turnover was normal and forced separately. Therefore, to accurately estimate the specific effect of predicted (voluntary) and unpredicted (non-voluntary) changes in the board, we split the rate of board turnover in two groups based on the contract information available from our database: 1) normal changes (performing directorship, PD) that include expected changes in the board due to the end of the contract period (i.e., contract expiration), and 2) forced dismissals (non-performing directorship, NPD) that encompass unexpected changes in the board taking place before the contract expiration (i.e., contract termination). A turbulent and churning board is argued to be ill adapted to confront the added complexities of guiding the organisation towards an optimal risk configuration—which tolerates and efficiently manages certain levels of non-performing loans—that could lead to maximum returns.

*Control variables.* All model specifications control for bank size, board size, capital adequacy and time. Bank size is measured as total assets, expressed in millions of 2012 constant Costa Rican colones. Board size is defined as the total number of directors. Note that, in all regression models, the variables ‘bank size’ and ‘board size’ are logged to reduce skewness.

In the context of the Costa Rican banking industry, the capital requirement is a relevant component of the monitoring scheme applied by the supervisory agency (SUGEF, 2000) after the regulatory changes introduced in 2000 (see Section 3.1). Capital adequacy—often proxied by relating equity and reserves to assets—is a regulation-led measure of the capitalisation level of banks as well as of the quality of credit-risk management practices which, in turn, may yield to superior operational flexibility by reducing uncertainty and potential credit losses (e.g., Banker et al., 2010; Barth, Caprio, & Levine, 2004; Epure & Lafuente, 2015). Therefore, we account for the potential effect of capital requirements on performance by introducing the capital adequacy ratio (CAR), which is computed as equity plus risk-weighted reserves divided by total assets. Finally, a set of time dummy variables is included to rule out the potential effect of time trends and changes in the economic conditions among the sample financial firms during the analysed period (Vaillant, Lafuente & Bayon, 2018). Note that, in all regression models, all time varying variables are lagged one period to control for potential endogeneity problems.

### 3.4 Method

The study employs panel data techniques to estimate the model that emphasises that bank performance (ROA) is affected by non-performing loans (NPL) and by different types of board

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<sup>3</sup> We also tested alternative definitions based on quarterly periods. Results, not shown due to lack of space but available on request from the authors, remain unchanged.

turnover, namely normal (performing directorship, PD) and forced (non-performing directorship, PD) turnovers. Pooling repeated observations on the same unit of analysis violates the assumption of independence of observations, resulting in autocorrelation in the residuals. First-order autocorrelation occurs when the disturbances in one period are correlated with those in the previous period, resulting in incorrect variance estimates, rendering ordinary least squares (OLS) estimates inefficient and biased (Wooldridge, 2002). Therefore, coefficients are estimated via fixed-effects panel data models with robust standard errors to correct for autocorrelation of disturbances due to constant firm-specific effects (Greene, 2003).

Based on the theory that underpins this study, the full model estimated by fixed-effects method that emphasises a relationship between economic performance (ROA), NPL and the different types of board turnover (PD or NPD) has the following form:

$$\begin{aligned} ROA_{it} = & \beta_0 + \beta_1 NPL_{it-1} + \beta_2 PD_{it-1} + \beta_3 NPD_{it-1} + \beta_4 NPL \times PD_{it-1} \\ & + \beta_5 NPL \times NPD_{it-1} + \beta_6 \text{Control variables}_{it-1} + \beta_7 \text{Time}_t + \eta_i + \varepsilon_{it} \end{aligned} \quad (1)$$

In equation (1)  $\beta_j$  are parameter estimates for the  $j$ th independent variable,  $\eta$  is the time-invariant bank-specific effect that controls for unobserved heterogeneity across financial firms ( $i$ ) and that is uncorrelated with parameter estimates; and  $\varepsilon$  is the normally distributed error term that varies cross-observations and cross-time ( $t$ ).

In terms of our hypotheses, a result of  $\beta_1 < 0$  for the NPL variable (equation (1)) will corroborate that low levels of NPL are associated with higher ROA levels (**H1**). Also, the second hypothesis (**H2**) that states that financial institutions with higher rates of NPL and greater non-performing directorship (NPD) show lower performance levels will be confirmed if  $\beta_{13} < 0$  (equation (1)).

#### 4. Results

This section presents the empirical results. Model 1 in Table 3 evaluates the specific effect of NPL and board turnover, while model 2 introduces an interaction term between NPL and board turnover into the analysis. Model 3 considers the effect of performing (PD) and non-performing (NPD) directorship. Finally, model 4 analyses the joint effect of PD, NPD and NPL.

Note that for the four models we computed the variance inflation factor (VIF) for all variables in order to test if coefficients are amplified due to correlations across the explanatory variables (collinearity). Table 3 reports the average VIF values as well as the minimum and maximum VIFs. The results for this test indicate that the average VIFs range between 1.67 (model 3) and 2.06 (model 4). In all models, the mean and the maximum VIF values are below the commonly used threshold point of 10, which confirms that the model specifications

proposed in this study are not contaminated by collinearity. Also, from the correlation matrix presented in Table A1 of the Appendix we note that correlations mostly fall into the low-mid range, and that the highest correlations are found between the board turnover variables—which justifies our approach to analyse board turnover (model 2) and the type of turnover (model 3) in separate models—and between capital adequacy, ROA and total assets (size).

The four regression models were processed in order to test the formulated hypotheses that in turn are meant to answer the set research question of whether the negative effect of NPL on performance is more pronounced in banks afflicted with non-performing directorships (NPD).

To these models, a series of variables were included that control for bank size (ln total assets), the capital adequacy ratio ( $[\text{equity} + \text{risk weighted reserves}] / \text{total assets}$ ), and board size defined as the log of the number of directors. These are all variables that may influence the correlations of our regressions and have therefore been included in order to make sure that the reported impact of the models' main independent variables is robust to the presence of these controls. The results for the control variables are consistent throughout the four specifications of our models and therefore are not suspected to bias our main results. From these control variables, we can confirm that, as is commonly found in the related literature (Barth et al., 2004; Bin, 2005; Epure & Lafuente, 2015; Moyer, 1990), the capital adequacy ratio is found to have a significant positive impact on the ROA levels of banks. Neither bank size nor board size were found to impact subsequent ROA.

The first specification of the model presented in Table 3 is the baseline model that includes the NPL ratio and proportion of board turnover as its main independent variables together with the mentioned control variables. The results of this base model (model 1 in Table 3) reflect those found in much of the literature where non-performing loans negatively affect banks' ROA, that is, NPL destroy value (e.g., Epure & Lafuente, 2015; Van Hoose, 2010). This result is consistent with our first hypothesis (**H1**) that proposes a negative relationship between NPL and performance (ROA).

However, when we interact the effects of the NPL ratio with board turnover, we observe that board turnover positively impacts ROA, but performance declines are predicted for banking firms with high levels of NPL and high board turnover rates (model 2 in Table 3). We tested if the coefficient linked to NPL is significantly different than the parameter linked to the interaction between NPL and board turnover, and the result of the F-test presented in Table 4 (F-test = 4.05 and  $p$ -value = 0.0494) corroborates our arguments. That is, the entire negative impact of NPL is concentrated among those banks at the intersection of increased NPL ratios and greater proportions of board turnover, whereas board turnover—a natural process in any organisation (Adams et al., 2010)—is beneficial to performance.

----- Insert Tables 3 and 4 about here -----

Having corroborated that the economic losses that follow high rates of NPL are more severe in financial firms that replace a high number of directors, models 3 and 4 deal with the specific role of the two types of directorships analysed in this study—i.e., natural (performing directorship) and forced (non-performing directorship)—in this relationship.

The third model in Table 3 is a repetition of the base-model, but where the nature of the board turnover has been specified in order to distinguish natural from forced replacements. In this specification of our base model we find that the type of board turnover that positively contributes to bank ROA levels is natural turnover only (performing directorship, PD). Forced board turnover is not found to have any significant impact over the model's dependent variable.

The results of the full specification are found in the fourth model of Table 3 where the NPL ratio is interacted with that of both forms of board turnover; natural (PD) and forced (NPD).

To aid in the interpretation of the results, we plot the interaction terms between the NPL ratio and the types of directorship variables (PD and NPD) based on estimates from model 4 (equation (1)). The results are presented in Figures 1 and 2. In the figures, the vertical axis is the estimated level of economic performance (ROA), and the horizontal axis indicates the level of performing directorship (PD) (Figure 1) and the level of non-performing directorship (NPD) (Figure 2). The joint effect of NPL and directorship (PD and NPD) is presented for three different levels of NPL (0%, 1.5% and 3%). Control variables are set at their sample means.

In the case of the rate of natural board turnovers—that we link to performing directorship (PD)—the significant positive impact of this variable on subsequent ROA is maintained. However, the interaction between PD and the NPL ratio is not found to have any significant impact on the economic performance of banks. As it can be seen in Figure 1, these results indicate that natural board turnovers are conducive to performance and that this effect is not conditional on the level of NPL reported by banks. The result of the F-test (Table 4: F-test value = 1.41 and  $p$ -value = 0.2410) confirms that the coefficient for PD (natural board turnover) and the parameter for the interaction between PD and NPL are not significantly different, which in terms of the findings in Figure 1 means that the changes in the slope reported for the effect of PD on ROA at different levels of NPL are not significantly different.

On contrary, the result for the interaction between NPL and NPD reveal that the negative impact over banks' ROA of NPL is concentrated at the intersection between increased non-performing loans and greater proportions of non-performing directorship, represented by forced board turnover. In this case, the parameter for NPD is significantly different than the interaction term between NPD and NPL (Table 4: F-test = 2.71 and  $p$ -value = 0.0927). That is, the changes in the slopes reported in Figure 2 are statistically significant. These results highlight the importance of balancing financial and non-financial objectives for enhanced governance and performance among the sampled banks. The negative relationship between NPL and future

ROA becomes stronger for those financial firms demonstrating non-performing directorship (model 4 in Table 3 and Figure 2). This result gives support to our hypothesis **H2** that states that the negative relationship between NPL and ROA is stronger among banks demonstrating high levels of non-performing directorship.

----- Insert Figures 1 and 2 about here -----

## 5. Discussion

The study presented in this paper aimed to verify whether the currently prominent policy among banking institutions of doing all it takes to maintain to a minimum the non-performing loans ratio is truly in the best interest of bank economic performance, in terms of ROA. Because financial institutions must forego high-risk-high-interest opportunities by adopting low NPL ratio objectives, low-risk-low-interest lending can represent a sub-optimal scenario, especially in a macroeconomic context requiring growth and stimuli (Kleinow et al., 2017). It was argued that the complexities of operating at an optimum loan ratio which requires accepting a certain level of non-performing loans requires a strong corporate governance represented by a competent board. The study therefore proposed and empirically tested whether the potential negative effect of NPL on ROA is stronger in banks afflicted with non-performing directorships (NPD)—in terms of forced turnovers within the board of directors—that arguably affect the monitoring and advisory roles of boards.

Building on the theoretical framework proposed by Garratt (2010) in which conformance and performance are separate governance roles of the board of directors, we tested the proposed model on a sample of the Costa Rican baking industry during 2000-2012. The findings corroborate the importance of balancing financial and non-financial goals for enhanced economic and governance performance. In this sense, we found that the economic losses that follow high rates of NPL are more pronounced among financial firms demonstrating high levels of non-performing directorship which we link to forced board turnover.

In coherence with the theoretical premise upon which the study has been founded, the results give evidence that boards of financial institutions, and more specifically its competence level, matters. A performant board, that is free of turbulence and undesired churn, is more apt to confront the added complexities of guiding the organisation towards an optimal risk configuration—which tolerates and efficiently manages certain levels of non-performing loans—leading to maximum returns. Such a competent board can better balance the conformance versus performance dyad and practice a more effective ambidextrous agility that fine-tunes the board to the specificity of the bank's dynamic internal and external environment.

These findings can be seen as contrasting with the dominant theoretical premises of the corporate governance literature. Contrary to the purely conformance orientation of a legal or

agency theoretical approaches, it is found that a certain leeway is best to optimise corporate performance. Nor is the unregulated performance orientation suggested by the stewardship and strategic choice governance approaches optimal in the case of financial institutions, when board competence is not taken into consideration. Over-conformance with a competent board or an exclusively performance-oriented governance with dysfunctional boards may both lead to sub-optimal financial results. The balanced governance roles between conformance and performance, which in many ways has tilted in favour of the latter within the banking industry, requires that the moderating character of board competence be recognised. The necessary conformance-performance ambidexterity of board governance is more easily attained in the presence of performing board directorship.

In practise, corporate governance and the role of boards are often diminished to standardisation and systemisation. In the face of the growing complexity across a multiplicity of governance contexts and specificities, we propose that competence within boards could go a long way to permit better customisation and fine-tuned governance that better addresses the specific situations confronting the corporations being governed.

## **6. Implications and future research lines**

From an operational and management control perspective, the findings of the study give evidence that banks should not prioritise the NPL ratio as the ideal measure of performance. The frequent practice of using a low NPL ratio as a proxy for good financial management and policy-goal by which the bank management is appraised, may not be in the best interest of the bank. Such control incentivises and ‘distorts’ the behaviour of management towards excessive levels of risk aversion that may often be suboptimal for the bank. A performant board should be able to implement a more adequate quantifiable measure of accountability that better captures the intricacies of optimally directing a financial institution’s credit portfolio. A more talented board that is able to take a less antagonistic and more collaborative view of its executive is often better able to comply with an ambidextrous conformance-performance governance role (Adams & Ferreira, 2007).

Good directorship may suppose a strong conformance orientation in times of external turmoil and economic downturn, but this should not persist indefinitely and become the norm. Because of the potentially traumatic consequences for the financial institution of overexposure to NPL in times of economic turbulence, most bank boards have erred towards conservatism and undue safeguard. The results of this study indicate that non-financial managerial control systems and measures beyond NPL levels can also be implemented by banking institutions so as to reach a better compatibility between the conformance and performance dimensions of bank governance. And this has been found to correlate with better performing banking institutions, even in the presence of positive NPL ratios.

The excessive conformance orientation of the boards of banks is not just suboptimal for the financial institution, but it also has its macroeconomic repercussions if it becomes common practice throughout the industry. Such behaviours can easily ‘stout’ growth and business dynamics in complex economic eco-systems by discouraging the funding of promising (high-potential high-risk) business projects (Kleinow et al., 2017). The resulting governance of a non-performing directorship may overly depend on routines and inertia brought about by standardised compliance to low NPL ratios where good governance requires a directorship that is able to show ambidexterity and a board that can sprightly configure the adequate balance between the conformance and performance dimensions of its governance in line with the specificities of the context facing the organisation.

As an extension to the model presented in this paper we introduced a control variable that detects whether the types of banking structure may influence the obtained results. The banking institutions were grouped according to their ownership structure (private, public or cooperative bank structures). The findings showed no significant difference between private, public or cooperative bank structures in what regards the relations captured by the model’s hypotheses. Therefore, the nature of a bank’s ownership structure does not influence the fact that the economic losses that follow high rates of NPL are more severe among financial firms that display non-performing directorship.

As with most empirical studies, a series of limitations apply, which open the door for further research opportunities. Because the research methodology used in the study is primarily based on a variance analysis of a quantitative nature, we can only speculate based on the adopted theoretical premise ‘How’ the dependent and independent variables analysed are truly bonded. To answer the ‘How’ question would require a process research approach.

Similarly, we have based our study on the Costa-Rican banking industry, which allowed us to capture the full population of banking institutions for the entirety of the thirteen-year period under analysis. However, as with any geographically bounded study, greater geographical comparative studies are needed. The specificities of the banking system in Costa-Rica, being a small and developing market, mean that the results of the study are themselves specific in nature and open to further verification in future studies.

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### List of figures

Figure 1. The effect of performing directorship and non-performing loans on ROA

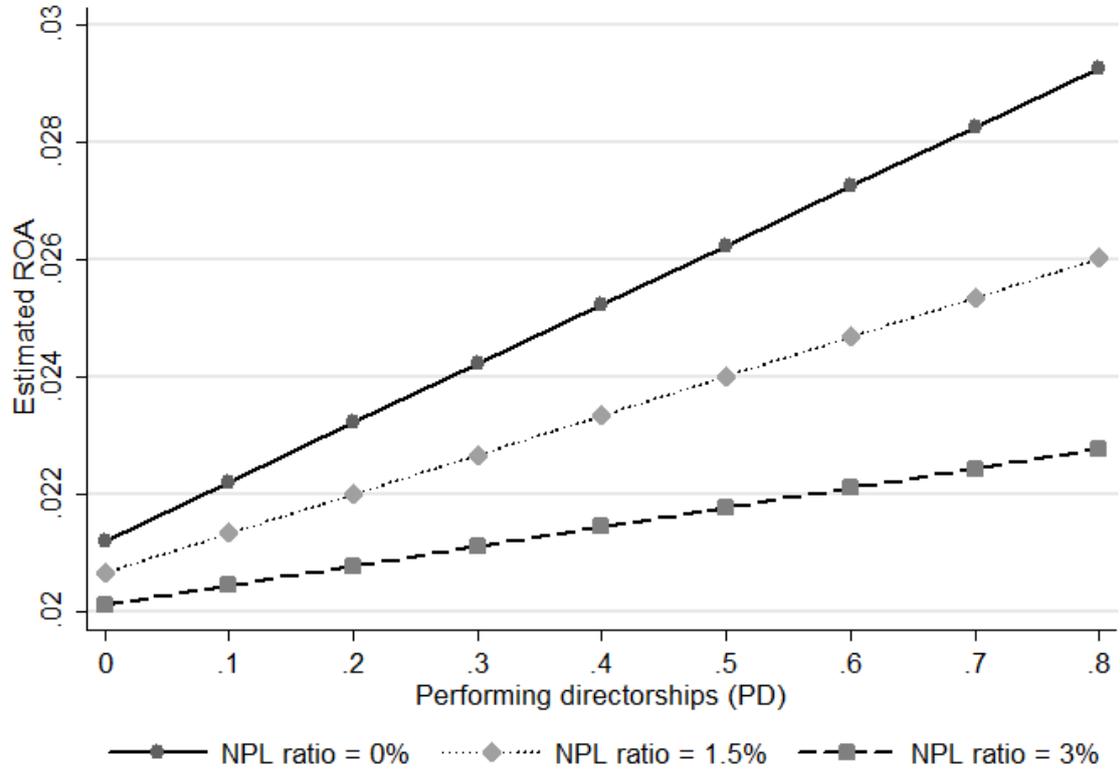
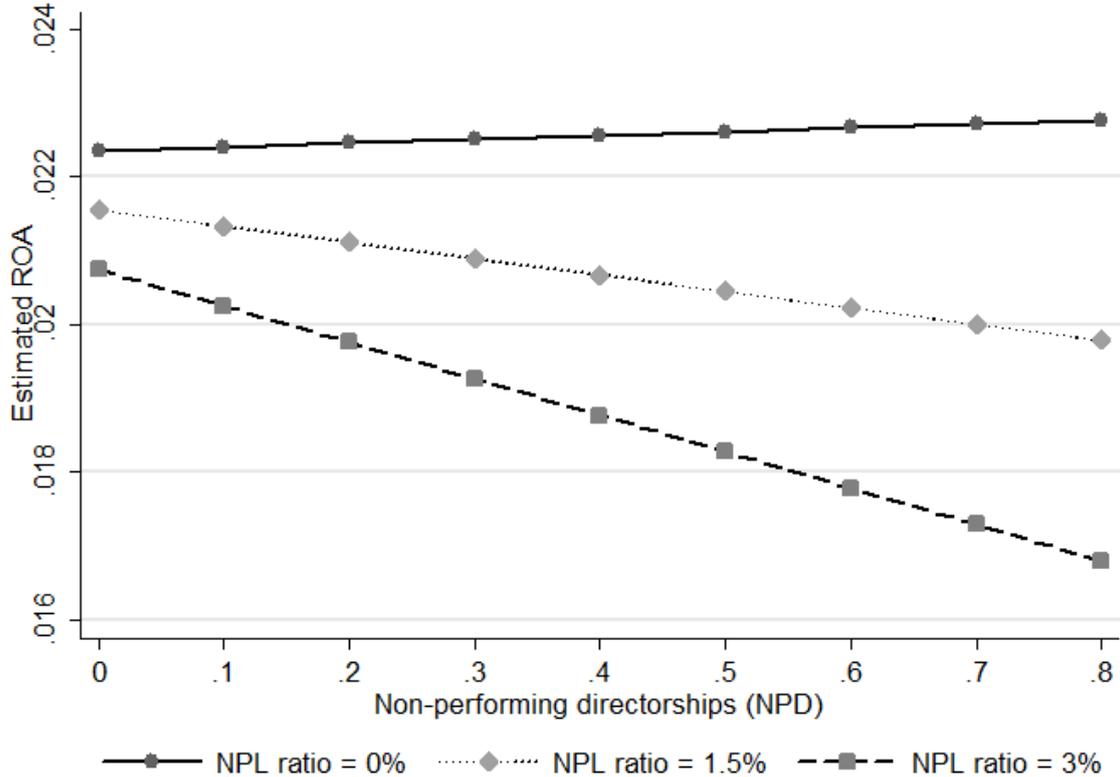


Figure 2. The effect of non-performing directorship and non-performing loans on ROA



## List of tables

Table 1. Conformance and Performance roles of Boards

Focus	Short-term focus on ‘conformance’	Long-term focus on ‘performance’
Internal focus	<p><i>Supervision:</i></p> <ul style="list-style-type: none"> <li>• Appointing and rewarding senior management</li> <li>• Overseeing management performance</li> <li>• Monitoring key performance indicators</li> <li>• Monitoring key financial and budgetary controls</li> <li>• Managing risks</li> </ul>	<p><i>Strategic thinking:</i></p> <ul style="list-style-type: none"> <li>• Agreeing strategic direction</li> <li>• Shaping and agreeing long-term plans</li> <li>• Reviewing and deciding major resource decisions and investments</li> </ul>

Source: adapted from Garratt (2010).

Table 2. Descriptive statistics for the study variables

	NPL ratio	ROA	Board turnover	Board turnover – natural (PD)	Board turnover – forced (NPD)	Total assets	Capital adequacy	Board size	Obs.
2000	0.0254	0.0207	0.1842	0.1444	0.0398	126,910	0.2683	7.3830	47
2001	0.0208	0.0237	0.1463	0.0997	0.0467	132,065	0.2550	7.3617	47
2002	0.0203	0.0262	0.1901	0.1449	0.0452	148,550	0.2524	7.3556	45
2003	0.0165	0.0239	0.1267	0.1125	0.0136	175,734	0.2295	7.3571	42
2004	0.0126	0.0252	0.1468	0.1075	0.0393	211,666	0.2177	7.4634	41
2005	0.0107	0.0254	0.1556	0.1018	0.0538	233,115	0.2001	7.5897	39
2006	0.0125	0.0224	0.2122	0.1416	0.0706	240,678	0.2039	7.5128	40
2007	0.0102	0.0213	0.1556	0.1157	0.0399	292,323	0.1867	7.5789	39
2008	0.0108	0.0230	0.1814	0.1179	0.0635	314,303	0.2141	7.6341	42
2009	0.0148	0.0178	0.1989	0.1146	0.0843	335,856	0.2131	7.7805	41
2010	0.0133	0.0167	0.2126	0.1296	0.0830	325,063	0.2128	7.9524	42
2011	0.0114	0.0164	0.1334	0.0974	0.0361	345,829	0.2101	7.9268	41
2012	0.0129	0.0151	0.1348	0.1056	0.0292	382,897	0.2069	7.8537	41
Total	0.0150	0.0214	0.1677	0.1182	0.0494	247,781	0.2222	7.5901	547

Table 3. Fixed-effects regression results: Board turnover, bad loan ratio and ROA

	(1)	(2)	(3)	(4)
NPL ratio	-0.0707** (0.0354)	-0.0284 (0.0362)	-0.0640** (0.0319)	-0.0273 (0.0360)
Board turnover (%)	0.0026 (0.0025)	0.0068** (0.0033)		
NPL ratio × Board turnover (%)		-0.2326** (0.1166)		
Board turnover, natural (PD) (%)			0.0063* (0.0037)	0.0101** (0.0050)
Board turnover, forced (NPD) (%)			-0.0031 (0.0033)	0.0005 (0.0038)
Board turnover, natural (PD) (%) × NPL ratio				-0.2249 (0.1946)
Board turnover, forced (NPD) (%) × NPL ratio				-0.1815* (0.1007)
Size (ln total assets)	0.0002 (0.0031)	0.0001 (0.0030)	0.0002 (0.0031)	0.0001 (0.0031)
Capital adequacy ([equity + reserves] / liabilities)	0.0545** (0.0215)	0.0542** (0.0215)	0.0534** (0.0214)	0.0533** (0.0213)
Board size (ln number of directors)	0.0012 (0.0061)	0.0010 (0.0061)	0.0006 (0.0062)	0.0005 (0.0062)
Year dummies	Yes	Yes	Yes	Yes
Intercept	-0.0025 (0.0521)	0.0001 (0.0513)	0.0025 (0.0625)	0.0043 (0.0523)
F-test	10.18***	11.13***	14.67***	16.65***
R2 (within)	0.3219	0.3253	0.3291	0.3317
Mean VIF (min-max)	1.69 (1.05-2.12)	1.96 (1.05-3.67)	1.67 (1.05-2.14)	2.06 (1.06-3.77)
Observations	491	491	491	491

In all models the dependent variable is the ratio of return on assets (ROA). All independent variables are lagged one period ( $t-1$ ) to avoid endogeneity. The variables linked to board turnover are estimated as the percentage change between the second semester of period  $t-1$  and the first semester of period  $t$ . All model specifications include a set of time ( $T-1$ ) dummies. Robust standard errors are presented in brackets. \*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1%, respectively.

Table 4. Comparison of coefficients (models 2-4 in Table 3)

	F-test	<i>p</i> -value
<b>Panel A: Model 2 in Table 3</b>		
NPL ratio = NPL ratio × Board turnover (%)	4.05**	0.0494
<b>Panel B: Model 3 in Table 3</b>		
Board turnover, natural (PD) (%) = Board turnover, forced (NPD) (%)	3.53*	0.0659
<b>Panel C: Model 4 in Table 3</b>		
Board turnover, natural (PD) (%) = Board turnover, forced (NPD) (%)	5.59**	0.0220
Board turnover, natural (PD) (%) = Board turnover, natural (PD) (%) × NPL ratio	1.41	0.2410
Board turnover, forced (NPD) (%) = Board turnover, forced (NPD) (%) × NPL ratio	2.71*	0.0927

\*, \*\*, \*\*\* indicate significance at the 10%, 5% and 1%, respectively.

## Appendix

Table A1. Correlation matrix

	1	2	3	4	5	6	7
1) NPL ratio	1						
2) ROA	-0.1456	1					
3) Board turnover	0.0322	0.0295	1				
4) Board turnover – natural (PD)	-0.0396	0.1482	0.7435	1			
5) Board turnover – forced (NPD)	0.0964	-0.1376	0.5743	-0.1205	1		
6) Total assets	-0.1395	-0.2864	-0.1747	-0.3602	0.1811	1	
7) Capital adequacy	0.0899	0.6954	0.1374	0.2717	-0.1286	-0.5805	1
8) Board size	-0.0657	0.1141	-0.0607	-0.0032	-0.0861	0.0203	0.1269

Correlations between  $|0.0860|$  and  $|0.0965|$  are significant at the 5% level, while correlations higher than  $|0.0965|$  are significant at the 1% level.