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**Research Article**

# Corporate Governance and banking performance in Portugal: The impact of variable - RAC_IMP (Impairments)

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**ABSTRACT**

Effective corporate governance practices are essential to achieving and maintaining societal trust in the banking system, which is essential for the smooth functioning of the financial sector and the economy.
Much of the literature associated with Corporate Governance considers, in addition to concepts, the implementation cycle and the corresponding models. Corporate Governance cycles are related to corporate bankruptcies and the negligence of the board of directors, which are more common when a long period of economic expansion is followed by a period of crisis, which demonstrates failures in Corporate Governance. The main objective of the research is to analyze the impact of variables associated with governance, structure, and economy on the economic and financial performance of banking institutions in Portugal. In the model, a risk measure is used to determine whether Corporate Governance has an impact on a bank's risk-taking, the Impairment Ratio for Credit to Customers in relation to Assets. After performing the significance test for each of the variables (student t test), it is possible to determine that the following variables will be excluded: Bank Size (LNAT), Customer Deposits (LNDEP), Interest Rate (TXJUR). We accept the following variables Corporate Governance (CG); Financial Autonomy (CPAT); Return on Average Assets (ROAA); GDP Rate Variation (TXPIB) and Inflation Rate (TXINF).

**Keywords:** Corporate Governance, e-governance, OLS, Banks, Impairments.

## INTRODUCTION

Effective corporate governance practices are essential to achieving and maintaining societal trust in the banking system, which is essential for the smooth functioning of the financial sector and the economy as a whole. Bad Corporate Governance can contribute to bank failures, which in turn can represent significant costs due to their potential impact on the macroeconomic system. Added to this is the risk of contagion to the entire sector, which may, at the limit, jeopardize the financial system, as was evident in the international financial crisis that began in mid-2007. In fact, in addition to their responsibilities towards shareholders, banks also have an obligation to answer to their depositors and other recognized stakeholders,

In Portugal, the IPCG – Instituto Português de Corporate Governance, a private law association, established in 2003, has the mission of "to establish itself as a center of excellence for reflection on matters related to corporate governance, disseminating and debating ideas and concepts on good corporate governance practices and contributing to the strengthening of ethics, accountability and transparency in their application." (IPCG 2020).

As for the objectives of the study, these allow indicating the main intention of the investigation, corresponding to the final product that is intended to be achieved. Thus, the main objectives of the paper can be summarized as follows:

i) Investigate the role of Corporate Governance in the Portuguese banking sector, specifically with regard to the performance of these institutions.

ii) Inquire about the main Corporate Governance variables that significantly affect bank performance and risk.

## LITERATURE REVIEW

The meaning of Corporate Governance emerges from the separation between ownership and management in a company and is associated with the conflict of interest between the principal (i.e., the owners) and the agents (i.e., the managers), commonly referred to as the agent problem. (Jensen and Meckling, 1976). As a result, the owner bears agency costs related to monitoring and auditing the private benefits obtained by the agents and the losses due to business decisions taken by the agent, which result, for example, from a low level of investments and the like.

The presence of Corporate Governance issues can influence the company's capital structure decisions, especially in relation to the company's access to financing. According to Crowther (2011), the absence of an effective Corporate Governance has major implications for the objective of creating value for the shareholder in the long term, in the transparency of operations and in the desired performance standards.

Habib (2004) argued that Corporate Governance in the banking sector plays a significant role in protecting the interests of financial institutions' stakeholders. As in any other economy, banks operating in the Portuguese market play a key role in financing the country's economy and growth. Corporate Governance in banking institutions in Portugal serves to meet the objectives of designing and implementing strategies that they consider appropriate to the interests of stakeholders and their sustainability regardless of economic circumstances. However, the financial collapse of 2007-2009 and the Portuguese sovereign debt crisis in 2011 affected the Portuguese banking system in a profound way, in such a way that many did not fulfill these objectives. Despite the existence of a regulatory and supervisory authority, control over the banking system and its operations proved to be ineffective. The poor performance of some banks in the domestic market during these periods leads to a solid justification for reviewing and implementing the Corporate Governance Code in the banking sector in Portugal.

Bob Tricker, a specialist in Corporate Governance, wrote the first book to use the title associated with this topic in 1984. He was also the founding editor of the research journal Corporate Governance – An International Review.

He was the author of the Tricker Model, a simple and easy-to-understand organizational governance model and a powerful tool for managers and boards of directors and auditing.

The question that many authors have tried to answer is: what is the ideal system of Corporate Governance? In fact, there is no single point of view on this subject and there are likely to be different "perfect" systems depending on the context in which entities operate. Clark (2007) affirms the tradition of Corporate Governance crises and reforms does not convey the inherent superiority of one system over the others. Furthermore, Corporate Governance is a complex concept that includes and encompasses different aspects of organizations. To analyze the best Corporate Governance system to implement, it is necessary to consider all the reforms (such as the Sarbanes Oxley Act, OECD guidelines, national corporate codes, etc.) that have taken place over the years in different countries in response to to financial crises, bankruptcies and financial fraud. These regulations and guidelines first sought to respond to a need to control the markets in the face of a series of scandals that took place, which jeopardized the reliability of the financial statements and governance, making it understood that individual interests prevailed over the interests of the organization.

In the specific case of banking institutions, specific issues of Corporate Governance arise. The first is associated with the need to ensure the continuous liquidity of the activity. The liquidity function can cause a problem for depositors because banks keep only a fraction of deposits in reserve, the so-called minimum cash reserve. Depositors cannot get their deposits refunded simultaneously because the bank will not have enough funds available to satisfy all depositors at once.

In addition to these specificities, banking institutions in their governance model still must face the traditional problems of agency and also the loyalty of their staff to the investment policy.

PA Gompers, L. Ishii and A. Metrick (2003) found a strong correlation between Corporate Governance and stock returns, as measured by Tobin's Q, in a study covering 1500 companies listed on the S&P 500 between September 1990 and December 1999 in which they aimed at building a Corporate Governance index.

Among the many existing studies, Sarah Bell (2019), in a work done for Grant Thornton, summarized the conclusions drawn as follows:

a) Companies with a strong Corporate Governance ratio are 29% more efficient at creating profits.

b) Companies with a strong Corporate Governance index are 43% more efficient at generating sales of products or services.

c) Companies with a strong Corporate Governance index generate 3.4 times more cash flows from their operations.

d) Companies with a good performance in terms of Corporate Governance generate twice the return for shareholders.

e) Companies that gradually increase their level of Corporate Governance to the next quartile generate 44% more operational cash flows, 46% more free cash flow and 10% more operational efficiency.

## THE MODEL

The model to work is mainly based on the theory of Wang (2018). We present below the justification of the independent and dependent variables.

### Dependent Variable

Impairment Ratio for Loans to Customers (IMPAT)

As for the impairment for loans granted, this reflects the quality of the bank's credit, with institutions with low credit quality indicating risky loans, which means that they are taking on greater risks and, consequently, will have to constitute impairments of value. higher (Wang, 2018). In the same line of reasoning, a lower amount of impairment means that there are fewer risks taken. Therefore, the impairment ratio for loans to customers will be used as an alternative dependent variable, which is calculated from the quotient between impairments and provisions constituted for customers and net assets.

### Independent variables

The independent variables were selected from the model used by Wang (2018), namely: Corporate Governance, bank size, financial autonomy, return on average assets, customer deposits, variation in the Gross Domestic Product (GDP) rate, inflation rate and interest rate.

Corporate Governance (CG)

Six important characteristics were filtered to measure the quality of the Corporate Governance in banks: total number of independent directors on the Board (1IND_CA), total number of executive and non-executive members of the Board (2ADM_CA), accumulation or separation of the power of CEO and Chairman of the Board (3CEO), percentage of shares held by directors (4ACI_CA), weight of shares held by foreign shareholders (5ACI_ESTR) and identification of the external auditor (6AUDIT).

$$CGit = 1IND\_CAit + 2ADM\_CAit + 3CEOit + 4ACI\_CAit + 5ACI\_ESTRit + 6AUDITit$$

Bank Size (LNAT)

One of the questions that has been debated over time is whether size affects the bank's risk. Pathan (2009) showed that it is, stating that the size of the bank influences the risks assumed by it, namely reduces the risk of insolvency. However, recent studies by Fu, et al. (2014), showed that smaller banks tend to take less risk, because the bigger the bank, the more complex it becomes, making it difficult to supervise risk. In this way, the size variable is included in the model, being represented by the logarithm of total assets, which is consistent with the studies by Fu, et al. (2014), Pathan (2009) and Wang (2018).

Financial Autonomy (CPAT)

Authors such as Haq & Heaney (2012) and Beltratti & Stulz (2012) claim that more capital improves banks' survival and reduces risks, so there is a negative relationship between capital and risk taking. Konishi and Yasuda (2004) consider that the implementation of capital adequacy requirements proposed by the Basel Committee reduces banking risk. However, Ghosh (2015) contradicts this thesis, demonstrating the existence of a positive relationship between the level of capital and bank risk. In this study, the quotient between own funds and total net assets is used as an independent variable representing the level of capital, consistent with Ghosh (2015) or Beltratti & Stulz (2012).

**Table 1.** Composition and aggregation of the CG variable

| Characteristics | Criteria |
|---|---|
| **1IND_CA** | If the CA is composed of 25% or more independent directors = 1; otherwise = 0. |
| **2ADM_CA** | If the CA has 12 or fewer members = 1; otherwise = 0. |
| **3CEO** | If there is separation of duties between the CEO and the Chairman of the CA = 1; otherwise = 0. |
| **4ACI_CA** | If the CA managers hold 10% or more of the share capital = 1; otherwise = 0. |
| **5ACI_ESTR** | If there are foreign shareholders = 1; otherwise = 0. |
| **6AUDIT** | If the external auditor (Big Four) does not change compared to the previous semester = 1; otherwise = 0. |

Return on Average Assets (ROAA)

The profitability indicator used is ROAA, a traditional performance measure, which calculates the return on a bank's average assets. There is supposed to be a negative relationship between the return on average assets and risk taking, according to the study by Wang (2018).

$$ROAAit = \frac{\text{Profit Before Taxes } it1}{(\text{Assets } it + Assets\ it-1)/2}$$

Customer Deposits (LNDEP)

As customer deposits are an external funding resource, these can be linked to the financial autonomy ratio, that is, greater financial autonomy means that the bank is being financed more by its own capital and using less external funding, reducing thus its level of indebtedness. That said, the logarithm of customer deposits is used as a variable for the specific characteristics of banks.

In addition to the bank-specific variables mentioned above, external variables of a macroeconomic nature were considered, which may affect bank performance and risk. Thus, three measures of the economy's performance were included to control the potential effects of the economic cycle: the variation of the GDP rate, the inflation rate and the interest rate.

GDP Rate Variation (TXPIB)

The semi-annual variation of GDP was used as a macroeconomic determinant in the model, serving to measure fluctuations in the country's economic activity, which in this case is Portugal. According to Ghosh (2015), the growth in the GDP rate translates into a reduction in risky loans and, in turn, this variation is expected to have a negative effect, since the higher the GDP rate, the lower the risk. Bank officer. In contrast, and from another perspective, DeYoung, et al. (2013) state that banks located in more favorable economic environments tend to implement higher risk strategies.

Inflation Rate (TXINF)

The inflation rate was also included as a macroeconomic variable, although its relationship with risk taking is still ambiguous among the authors. From the perspective of Ghosh (2015), there is a positive link between the inflation rate and banking risk. For Wang (2018), the stability of the inflation rate will allow the real value of a country's debt to decrease and, consequently, also reduce banking risk.

Interest Rate (TXJUR)

The 6-month interest rate will be the last macroeconomic indicator used in the model. Thus, rising interest rates will increase bank risk (Wang, 2018). However, Ghosh (2015) does not find any relationship between the interest rate on loans and risk taking.

## Study Sample

The study sample is composed of ten banking institutions in Portugal. They are described in the **Table 2**. The **Table 2** refers to the institutions and places them in two groups. The difference is that in group II we have institutions that had their viability in question.

The case of Banif appears after the inability of the bank's management to guarantee its liquidity. In 2012, the Portuguese State was forced by the very poor financial situation of the bank to intervene and become a shareholder. It then holds 60% of the Bank's capital.

In December 2015, Banif underwent a resolution process. As part of this process, assets considered to be of good quality were sold to the Banco Santander Totta, an affiliation of the Santander Groupin Portugal.

The BES case is based on a series of irregularities practiced by the directors that severely damaged the structure, leading the State and the financial system to intervene with losses in the order of billions of euros.

**Table 2.** Groups of banking institutions

| |
|---|
| Caixa Geral de Depósitos (Group I) |
| Millennium BCP Bank (Group I) |
| Banco Santander Totta (Group I) |
| Banco Espírito Santo / Novo Banco (Group II) |
| Banco Português de Investimento (BPI) (Group I) |
| Montepio Geral (Group I) |
| Central Mutual Agricultural Credit Bank (CCAM) (Group I) |
| International Bank of Funchal (BANIF) (Group II) |
| BIC Bank (Group I) |
| People's Bank (Group I) |

## Outliers

Many of the statistics to be used in this investigation are sensitive to outliers. Quoting Maroco (2010, p.584) “Outliers are extreme, non-characteristic observations that present residues that are considerably higher, in absolute value, than the residues of other observations”. In turn, Maroco (2010) states that the validation of a model must have the elimination of outliers as a necessary condition. Thus, it seems sensible to identify outliers and only eliminate those with outliers.

Using Eviews 12, a study of the outliers for the different variables was carried out, having determined for the variables that make up the Corporate Governance index. There are no extreme values, which is not surprising given that we are in the presence of binary variables.

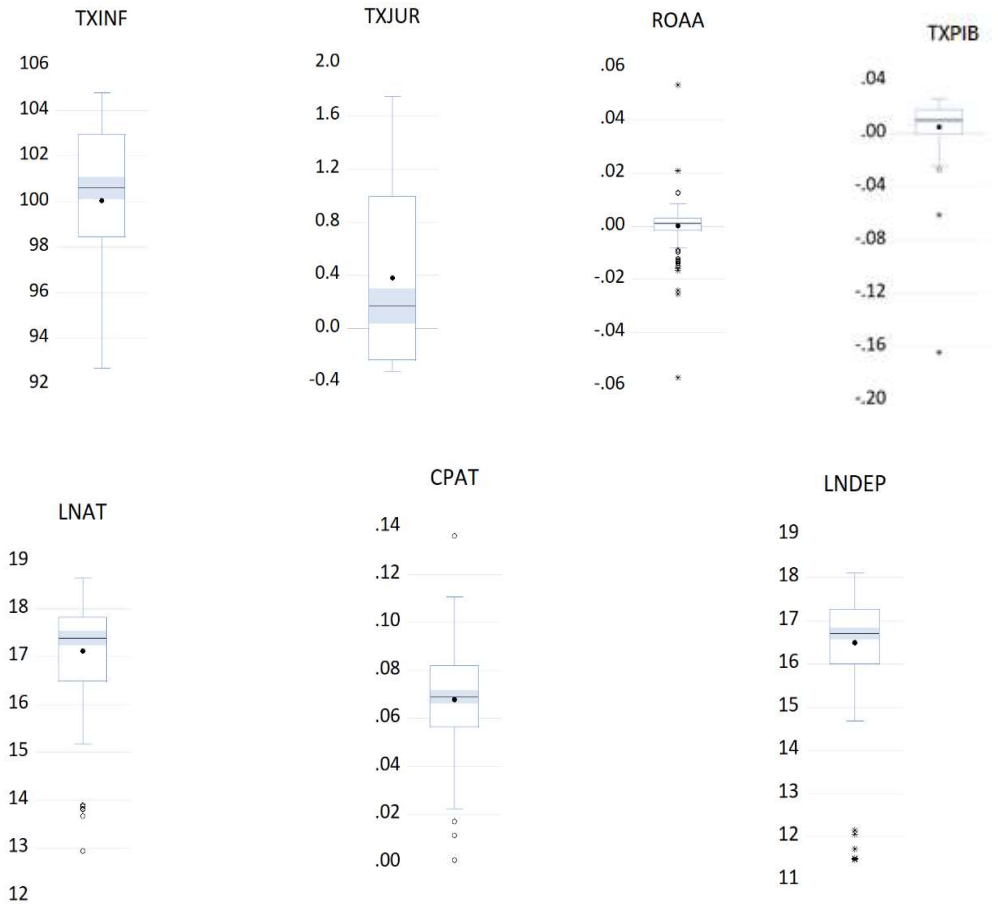


**Figure 1.** Vertical boxplot

Regarding the remaining variables, the treatment of outliers revealed in most of them the existence of extreme values. The previous graphs show this analysis with the extreme values taken from the list of observations.

The bounds of the box are the range of Tukey values. The median is identified by a line inside the box. The length of the box is the interquartile range (IQR) calculated from the Tukey values. Values greater than three IQRs from the edge of a box are labeled as extremes, indicated by an asterisk (*). Values above 1.5 IQRs but less than 3 IQRs from the end of the box are labeled as outliers (o).

Generally, outliers have large residuals and can influence the fitted model. Graphical analysis of residuals using a boxplot (and its quartiles, maximums, and minimums) is an option.

## RESULTS

In the following **Figure 2**, the normality of the variables is studied through the model that is based on RAC_IMPAT. In view of the JB statistic and as the p-value is greater than 5%, we reject H0, that is, we assume that the residuals do not follow a normal distribution.

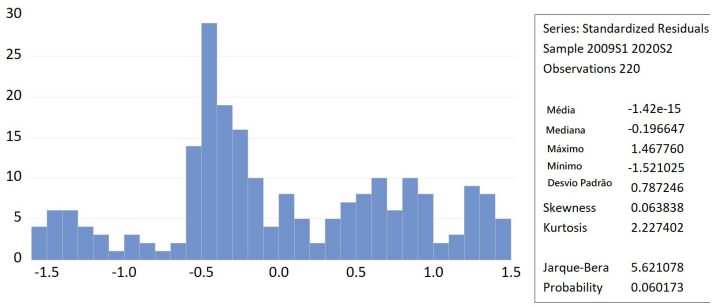


**Figure 2.** JB Test

H0 – residuals follow a normal distribution

H1 - residuals do not follow a norm distribution

Ordinary least squares (OLS) regression is a common technique for estimating coefficients from linear regression equations that describe the relationship between one or more independent variables and a dependent variable (single or multiple linear regression). Maximum likelihood estimator and generalized moments method are alternative approaches to OLS.

Next, we will analyze the model created in which the dependent variable is RAC_IMPAT. The model studied in the Eviews software is as follows:

**Table 3.** Estimation Based on Panel Least Squares Method

| Dependent Variable: RAC_IMPAT | | | | |
|---|---|---|---|---|
| Method: Panel Least Squares | | | | |
| Sample: 2009S1 2020S2 | | | | |
| Periods included: 24 | | | | |
| Cross-sections included: 11 | | | | |
| Total panel (unbalanced) observations: 220 | | | | |
| variable | coefficient | Std. error | t-Statistic | Prob. |
| Ç | -0.115692 | 0.070027 | -1.652103 | 0.1000 |
| LNAT | -0.000686 | 0.004817 | -0.142417 | 0.8869 |
| CPAT | 0.340187 | 0.068816 | 4.943419 | 0.0000 |
| ROAA | -1.262558 | 0.134681 | -9.374465 | 0.0000 |
| LNDEP | 0.001921 | 0.004453 | 0.431326 | 0.6667 |
| TXDPIB | 0.143271 | 0.067262 | 2.130048 | 0.0343 |
| TXJUR | -0.004967 | 0.003740 | -1.328275 | 0.1855 |
| TXINF | 0.001292 | 0.000641 | 2.016260 | 0.0450 |
| CG | -0.005472 | 0.001399 | -3.910753 | 0.0001 |
| R-squared | 0.538698 | mean dependent var | | 0.037036 |
| Adjusted R-squared | 0.521208 | SD dependent var | | 0.023560 |
| SE of regression | 0.016302 | Akaike info criterion | | -5.354997 |
| Sum squared reside | 0.056075 | Schwarz criterion | | -5.216167 |
| log likelihood | 598.0497 | Hannan-Quinn Criter. | | -5.298934 |
| F-statistic | 30.80018 | Durbin-Watson stat | | 0.391224 |
| Prob(F-statistic) | 0.000000 | | | |

Using the variable RAC_IMPAT as an independent variable, the variables with a negative impact on it are LNAT, ROAA, TXJUR and CG.

RAC_IMPAT =-0.115692 -0.000686LNAT +0.001921LNDEP --0.005472CG +0.340187CPAT +0.143271TXPIB -0.001292TXINF --0.004967TXJUR --1.262558ROAA.

After performing the significance test for each of the variables (student t test) it is possible to determine that the following variables will be excluded: LNAT, LNDEP, TXJUR.

GLS Methodology

The use of the GLS method allowed reaching the conclusions of the previous **Table 3**. It emphasizes that only the variables LNAT, ROAA TXJUR and CG have a negative impact on Corporate Governance. This conclusion is in line with the conclusions drawn from the OLS methodology. The estimated model takes the following form:

RAC_IMPAT =-0.115692 - -0.000686 LNAT + 0.001921 LNDEP + 0.154133 CG -0.005472 CPAT + 0.143271 TXPIB + 0.001292 TXINF - -0.004967TXJUR -1.262558 ROAA.

The variables LNAT, TXJUR and LNDEP are excluded because the p-value is greater than 0.05.

These results are compatible with the OLS methodology

**Table 4.** Estimation Based on Generalized Linear Model Method

| Dependent Variable: RAC_IMPAT | | | | |
|---|---|---|---|---|
| Method: Generalized Linear Model (Newton-Raphson / Marquardt steps) | | | | |
| Sample: 2009S1 2020S2 | | | | |
| Included observations: 220 | | | | |
| Family: Normal | | | | |
| Link: Identity | | | | |
| Dispersion computed using Pearson Chi-Square | | | | |
| Convergence achieved after 0 iterations | | | | |
| Coefficient covariance computed using observed Hessian | | | | |
| variable | coefficient | Std. error | z-Statistic | Prob. |
| Ç | -0.115692 | 0.070027 | -1.652103 | 0.0985 |
| LNAT | -0.000686 | 0.004817 | -0.142417 | 0.8868 |
| CPAT | 0.340187 | 0.068816 | 4.943419 | 0.0000 |
| ROAA | -1.262558 | 0.134681 | -9.374465 | 0.0000 |
| LNDEP | 0.001921 | 0.004453 | 0.431326 | 0.6662 |
| TXDPIB | 0.143271 | 0.067262 | 2.130048 | 0.0332 |
| TXJUR | -0.004967 | 0.003740 | -1.328275 | 0.1841 |
| TXINF | 0.001292 | 0.000641 | 2.016260 | 0.0438 |
| CG | -0.005472 | 0.001399 | -3.910753 | 0.0001 |
| mean dependent var | 0.037036 | SD dependent var | | 0.023560 |
| Sum squared reside | 0.056075 | Root MSE | | 0.015965 |
| log likelihood | 597.9551 | Akaike info criterion | | -5.354137 |
| Schwarz criterion | -5.215307 | Hannan-Quinn Criter. | | -5.298074 |
| deviance | 0.056075 | Deviance statistic | | 0.000266 |
| Restrict deviance | 0.121558 | LR statistic | | 246.4014 |
| Prob(LR statistic) | 0.000000 | Pearson SSR | | 0.056075 |
| Pearson statistic | 0.000266 | dispersion | | 0.000266 |

## CONCLUSIONS

The first approach of this study consisted of approaching the theoretical concepts. It all starts with wanting to know what Corporate Governance is. Deswe take the definition of Denis and McConnell (2003), who emphasize that Corporate Governance can be defined as the set of mechanisms - both institutional and market-based - that induce stakeholders interested in a company to make decisions that maximize the value of the company for its shareholders.

Thus, two key elements appear during this whole process. Stakeholders and company managers. It is necessary that the interest of maximizing the value be shared by the parties, never overlapping personal interests harmful to the defined objective.

Despite these limitations, (access of information for other variables) this work aims to contribute to the sustainability of management support, seeking to ensure a successful organizational purpose, based on efficiency and effectiveness,

protecting investors and stakeholders.

Given the bankruptcies and insolvencies of recent years, as well as the evolution of the economy in general, the question arises as to whether the Corporate Governance indices reflect the current reality.

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