



## The Effect of Intra-Organizational Factors on the Relationship between Corporate Governance and Profitability of the Listed Banks in Iran's Stock Exchange, in Alignment with Realization of the Resistive Economy Objectives

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### ABSTRACT

This study investigated the effect of intra-organizational factors on the relationship of the corporate governance system with profitability of the listed banks on the stock exchange in the Islamic Republic of Iran in the period 2011-2020, using fixed effects method for a panel (mixed) data set. At first, the research model was examined without the intra-organizational factors. The results of the estimation showed that among the variables associated with profitability, exchange rate had a negative and significant effect on profitability at the 95 percent interval. Other variables were found to have a positive and significant effect on the bank profitability. Next, the intra-organizational factors were introduced into the model. The empirical evidence obtained from the test of the hypotheses indicated that corporate governance, inflation, economic growth, bank size, capital adequacy, and financial leverage had, at the 95 percent confidence interval, a significant effect on the bank profitability. In contrast, a negative and significant relationship was found between exchange rate and financial risk, on the one side, and the bank profitability, on the other. In addition, examining the effect of intra-organizational factors on the relationship between corporate governance and profitability, it was found that the intra-organizational variables strengthened the relationship between corporate governance and profitability by 0.0174 units.

**KEYWORDS:** Intra-organizational factors; Corporate Governance; Profitability; Panel data

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## 1. Introduction

One of the requirements in order for a resistive economy to achieve its objectives is to enable and enhance profitability by identifying the factors contributing to it in each of the legislative, executive, and supervisory bodies and institutions, in accordance with their functions and authority. One of these institutions are banks. Banks are one of the oldest, most active and most widespread financial intermediaries that play a unique role by helping to meet the needs of the national economy, creating stability in the national economy, as well as promoting investment and real production.

Therefore, profitability and identification of the factors contributing to it in the banking system have been of growing interest, especially in the Islamic Republic of Iran with a less developed capital market, where banks play a key role in financially supporting the country's medium-term and long-term economic plans. Factors affecting banks can be divided into two categories: internal and external factors. In this regard, one of these factors that received more attention after the financial crises of 2007-2008 was the issue of corporate governance and its impact on profitability of banks. Corporate governance involves a set of relationships between the company's management, the board of directors, shareholders and other interest groups (including the government) to provide for a control system or mechanism that serves to respect and protect the rights of the stakeholders and minor shareholders, ensure the correct implementation of the resolutions of the general meeting, and prevent possible abuses. Each organization has a unique set of corporate governance practices based on factors such as legal framework, corporate structure and financial systems.

The study was conducted in this context and given the fact that the effect of the intra-organizational factors and corporate governance on profitability of the banks in the Islamic Republic of Iran has not been addressed in previous studies. The results of this research can help the managers and consultants of banks to identify and consider the profitability-related intra-organizational factors in their planning to more effectively improve the bank's business. Hence, the main question this research seeks to answer is what effects the intra-organizational factors have on the relationship between corporate governance and the profitability of the banks operating in Iran that would help the resistive economy to achieve its goals.

This paper is organized as follows. In section 2, theoretical framework and empirical background are presented. In section 3, research methodology, the empirical model and the testing procedures are described. Section 4, findings, presents the results of the analysis regarding the effects of intra-organizational factors on the relationship between corporate governance and profitability in the sample banks. Section 5, makes the concluding remarks and a number of suggestions.

## 2. Theoretical framework and empirical background

The banking industry plays a significant role in advancing the goals of the resistive economy by stabilizing the national economy, responding to the needs of the national economy and pioneering in strengthening the real sector of the economy, transparency and economic health. The country's banking system needs to have an efficient, coherent, transparent and profitable structure in order to provide the right ground for the economic growth and prosperity. The economic development of the country depends to a large extent on the level of profitability and utility of banks' performance, since their unhealthy and bad performance can lead to financial and economic crises (Mesri, 2016). Profitability is defined as the ability of a company (bank) or institution to generate enough income in such a way that after paying off the current expenses, an additional amount called profit remains for the company (bank) (Sayedi, 2013). Investors and creditors are very interested in assessing the current and future profitability of a company (bank). They use profitability ratios to evaluate the operating activities of companies (banks). Profitability ratios measure the success rate of the company (bank) in obtaining profits and net returns relative to revenue and sales or relative to investment. These ratios are of two types: the first measures profitability in relation to sales and income and the second measures profitability in relation to investments and assets.

Theoretically and empirically, several factors directly or indirectly affect the bank profitability. Among these factors it can be referred to the bank size, the type of banking services, its social responsibility, the degree of risk and moral hazard, the fields of activity, the quality of banking services,

corporate governance, industry conditions, macroeconomic conditions, financial depth, market structure, legal framework, public institutions, and economic freedom.

In recent years, especially after the financial and banking crisis of 2007-2008, there has been a growing interest in issues such as corporate governance system and how it may influence banks and financial institutions. Corporate governance involves a set of relationships between the company's management, the board of directors, shareholders and other interest groups (including the government), to provide for a control system or mechanism that serves to respect and protect the rights of the stakeholders and minor shareholders, ensure the correct implementation of the resolutions of the general meeting, and prevent eventual abuses (Bani Talebi, 2016). Corporate governance either directly or indirectly affects bank profitability. In direct form, for instance, the size and characteristics of the board of directors, as one of the chief constituents of the corporate governance system, exert a positive effect on the company's performance. Because the decisions of a larger board of directors, with more people in charge of control and supervision, can perform more efficiently and better address the concerns of the stakeholders compared to smaller boards of directors. In addition, large boards have a greater diversity of expertise and experience, enhances company's reputation and image. Indirectly, corporate governance affects performance through other variables. For example, Jizi et al. (2014) found a positive and significant relationship between board independence and corporate social responsibility practices. They argued that external independent directors on the board strengthen the monitoring and control function of the board to ensure that the social interests of the shareholders are preserved. Ntim and Soobaroyen (2013) also showed that larger boards lead to greater investment in CSR activities. They, accordingly, suggest that independent board members strengthen management oversight and allow executives to engage in sustainable CSR activities with potentially beneficial consequences for their companies' financial performance (Nobakht, 2021).

Extensive studies have addressed profitability and factors associated with it. Mahmoudi (2018), in a study titled The effect of financial crises on the profitability of banks listed in the Tehran Stock Exchange, investigated the effect of factors on the profitability of banks in Iran with an emphasis on the financial-banking crisis over the years 2017-2018, using fixed effects method for panel data. The results of the model estimation in this study showed that liquidity, capital adequacy, economic growth rate had a positive impact on the profitability of the sample banks. In contrast to inflation rate and exchange rate, bank size, deposit volume, interest rate and financial-banking crisis negatively affected profitability.

Afshari et al. (2015), in a study titled The effect of the financial crisis on the profitability of Islamic and conventional banks (with emphasis on the 2008 financial crisis), investigated the effect of the financial crisis on the profitability of Islamic and conventional banks over the period of 2005-2012, using weighted least squares method. The independent variables, in this study, included two types of bank-specific variables (the ratio of investment portfolio to total assets, the ratio of bank deposits to total deposits and financial leverage) and macroeconomic variables (changes in GDP). To compare the performance of Islamic and conventional banks during the financial crisis, return on assets was used as the measure of the bank profitability. The results showed that the financial crisis had a negative effect on the profitability of both Islamic and conventional banks, yet Islamic banks were more profitable than conventional banks during the financial crisis. Among the reasons offered for this, they refer to prohibition of usurious transactions, emphasis on real contracts, distribution of investment risk and limitation of speculative activities in the Islamic banking system.

In another study titled Financial stability and factors affecting financial stability of the domestic banks, Mirbaghri Heer et al. (2016) showed that the level of financial stability in the studied banks differed and was not the same in private and public banks and the public banks enjoyed a higher degree of financial stability relative to the private banks.

Djebali and Zaghdoudi (2020) investigated the relationship between corporate governance and performance in Tunisian banks, adopting the GMM approach. They examined the impact of corporate governance components on the performance of 10 listed banks in the Tunisian stock exchange over the period of 1998- 2015. Their findings indicated that there was a positive and significant correlation

between the size of the managerial board, the quality of governance, and the presence of independent directors, on the one side, and bank performance, on the other. Conversely, CEO compensation and presence of foreign and institutional investors had a negative effect on bank performance.

Mouri and Swadip (2019), in a study titled Examining the Impact of Corporate Governance on Banks' Performance using CAMELS Approach: A Panel Data Study of Selected Banks in Bangladesh, investigated the impact of corporate governance on the performance of 15 commercial banks in Bangladesh during 2010-2015, using panel data. They found that the board size, membership of the audit committee, shareholding by the board of directors had a negative relationship with the bank performance. Conversely, gender diversity in the board of directors, the participation of the independent director, the audit committee, limited amount of shares, the number of board meetings, and the number of the board sub-committees positively influenced the bank performance.

Leone et al. (2018), in a study titled How Does Corporate Governance Affect Bank Performance? The Mediating Role of Risk Governance, investigated the issue in 31 Italian banks in the period 2008-2017 using panel data regression technique. Considering the mediating role of risk management (presence of risk committee and the number of meetings held by risk committee in a year), they investigated how bank management (i.e. board size, board composition, ownership structure) affected bank performance in terms of return on assets (ROA). They found that the board size had a positive relationship with the presence of a risk committee and the number of its meetings. The percentage of independent directors in the board had a positive relationship with the percentage of independent directors in the risk committee, which, in turn, positively influenced the performance. Finally, the presence of the owners of institutions was positively associated with the presence of the chief risk manager and, consequently, with the bank performance. In short, they concluded that banks with broader and more heterogeneous boards had better risk.

### 3. Methodology

In this research, which is an applied-descriptive research, based on the approach adopted by Mouri and Swadip (2019) and paying attention not to create exact collinearity between the variables, we seek to identify and investigate the factors affecting the profitability index with an emphasis on corporate governance using the following multivariate regression model.

(1)

$$P_{it} = \beta_0 + \beta_1 A_{it} + \beta_2 CA_{it} + \beta_3 Risk_{it} + \beta_4 CG_{it} + \beta_5 GDP_t + \beta_6 EX_t + \beta_7 INF_t + \beta_{10} LEV_t + \varepsilon_{it}$$

In relation (1),

$P_{it}$ : bank profitability index

$CG_{it}$ : corporate governance

$INF_t$ : inflation

$GDP_t$ : Economic growth

$A_{it}$ : bank size

$LEV_{it}$ : financial leverage

$CA_{it}$ : capital adequacy

$Risk_{it}$ : financial risk

$\beta_i$  Coefficients for bank-specific and macroeconomic factors

$\varepsilon^t$  Residual or error term, and the subscript  $t = 1 \dots T$  denotes the understudy time period, i.e. 2011-2020, and the subscript  $i$  denotes the cross sections, i.e. 15 listed banks on the stock exchange, to name Mellat, Refah, Saderat, Tejarat, Parsian, Pasargad, City Bank, Karafarin, Sarmayeh, Sina, Saman, Eghtesad-e Novin, Maskan, Post Bank, and Tose'eh Saderat) which were selected using convenient sampling.

The model is estimated using the panel data method. The way the variables are measured is presented in table (1). The model's variables were extracted from the financial statements of the selected banks.

**Table 1.** The model's variables and their symbols

Variable		Indicator	Symbol	
Dependent variable	Profitability	Net income (after tax)/total assets	ROA	
Independent variables	Corporate governance	Shares held by owners more than 5 percent of the company's shares	$CG_{jit}$	
	In-bank factors	Bank size	Logarithm of total assets	$A_{it}$
		Financial leverage	Ratio of total debt to total assets	$LEV_{it}$
		Capital adequacy	Ratio of equity to total assets	$CA_{it}$
		Financial risk	Average of three risks: credit risk (CR), liquidity risk (LR), and interest rate risk (IRR)	$Risk_{it}$
	Out-bank factors	Inflation	GDP (implicit) growth rate	$(INF)_t$
		Exchange rate	Free market exchange rate	$(EX)_t$
		Economic growth	Gross domestic product (GDP)	$(GDP)_t$

#### 4. The model estimation

##### *Test of normality*

To use the right statistical technique for testing hypotheses, it is first determined whether the collected data has a normal or non-normal distribution. For normally distributed data, parametric tests, and for not normally distributed data, non-parametric tests, are used. Due to the fact that there are few economic variables in this research, the normality of each of them needs to be examined in order to choose the appropriate test to check the validity of the research assumptions. According to the central limit theorem, since the number of observations is more than 30, the assumption on normality of research variables is confirmed.

##### *Pearson's correlation test*

Given the normal distribution of the research variables, as verified by the normality test, Pearson's parametric correlation test was used to examine the assumed relationships between the variables. The mentioned test by determining the significance of the relationships enables us to judge accuracy of the respective hypotheses in order to confirm or reject them. Therefore, if the significance level is less than

5%, the hypothesis is rejected and the alternative hypothesis defined by the researcher is confirmed. The results of correlation tests between independent and dependent variables are presented in Table 2.

**Table 2. Correlation between research variables**

Dependent variable	Test statistic	Independent variables							
		Corporate governance	Inflation	Exchange rate	Economic growth	Bank size	Financial leverage	Capital adequacy	Financial risk
Profitability	Pearson coeff.*	0.232	0.216	-0.208	0.224	0.228	0.201	0.236	-0.204
	Sig.	0.001	0.007	0.000	0.000	0.000	0.000	0.120	0.0031

\* Significant at 0.05 (2 tails)

The test results in table 2 shows a positive and significant correlation between profitability and corporate governance, inflation, economic growth, bank size, financial leverage and capital adequacy, and a negative and significant correlation between profitability and exchange rate and financial risk.

#### ***Unit root test (test of variable reliability)***

Unreliability in the data causes the coefficient of determination to be very high (close to one) in the the regression models fitting, which indicates a false regression, leading to incorrect statistical inferences. In this part, we seek to test whether the model's variables are stable or not. The result of Im, Pesaran, and Shin (2003) (IPS) unit root test for the variables is provided in the table below, which indicates that all variables are at a reliable level.

**Table 3. Im, Pesaran, Shin (IPS) test of reliability**

Variable	Test result	Sig.	Test statistic
Profitability	3.058	0.0001	At reliable level
Corporate governance	2.745	0.0003	At reliable level
Inflation	3.298	0.0009	At reliable level
Exchange rate	2.584	0.0000	At reliable level
Economic growth	3.439	0.0000	At reliable level
Bank size	2.896	0.0024	At reliable level
Financial leverage	2.745	0.0015	At reliable level
Capital adequacy	2.542	0.0000	At reliable level
Financial risk	2.384	0.0001	At reliable level

#### ***F test and the choice of joint and fixed effects method***

Based on the panel data methodology, before estimating what is important, the issue of determining the right method for the model estimation is considered. To do this, first, it should be tested whether the model is to be estimated by the combined method (joint effects) or by the panel data method. For this purpose, the F test is used. In this test, first, the model specified in relation (1) is estimated by fixed

effects method and once by joint effects method. After estimating the model by the two methods of fixed and joint effects, the sum of the squared residuals in both cases is extracted and the F test statistic is calculated. In the Eviews software, which is used in this research, it is possible to perform the mentioned test directly. The test results are presented in table (4).

**Table 4. The results of F test**

	<b>Model (3-5) with intra-organizational factors</b>	<b>Model (3-5) without intra-organizational factors</b>
F statistic	21.33	19.35
Probability value	0.0000	0.0000

Based on the results of table (4), the F test statistic for both cases with/without internal factors is equal to 21.33 and 19.35, respectively, and its probability value is less than 5% (the probability value corresponding to the statistical null hypothesis is 0.0000). Thus, with 95% confidence, the null hypothesis that the y-intercept of the sections is equal cannot be accepted and is rejected, and the alternative hypothesis (H1) is accepted. Therefore, panel data method is chosen instead of combined data to estimate model (1).

#### ***The Choice between random effects method and fixed effects method***

After selecting the panel data method based on the F test, in the second step, it is decided whether the fixed effects method or random effects method should be used to test the panel data. This is done using the Hausman test. To perform this test in Eviews software, at first, model (3-5) with random effects method and for two modes of estimation and post-estimation is estimated and then, the Hausman test is performed and thereby the corresponding fixed effects estimator is estimated. The results hereof are presented in table 5.

**Table 5. Chi-square statistic of Hausman test**

	<b>Model with intra-organizational factors</b>	<b>Model without intra-organizational factors</b>
Chi-square	16.3	12.6
Probability value	0.0000	0.0000

According to the Hausman test results (table 5), Chi-square for cases with/without intra-organizational factors, is 16.3 and 12.6, respectively, with a probability value of less than 5%. Hence, at a significance level of 5%, the null hypothesis is rejected, and the panel data method with fixed effects will be used to estimate model (1) for both cases with/without intra-organizational factors.

## **4. Findings**

### ***Model (1) estimation by fixed effects method with and without Intra-organizational factors***

#### ***Model (1) estimation in absence of intra-organizational factors***

Since all the variables are at a stable level, the ordinary least squares (OLS) method is used for this instance in the interval of 2010-2019. The results hereof are presented in table 6.

**Table 6.** Model (1) estimation without intra-organizational factors

	Coefficient	Statistic	Probability value	Hypothesis testing
Intercept	0.0520	3.19	0.0090	-
Corporate governance	0.0710	3.16	0.0024	Positive & significant effect
Inflation	0.0300	2.94	0.0030	Positive & significant effect
Exchange rate	-0.0114	-2.42	0.0008	Negative & significant effect
Economic growth	0.1850	3.88	0.0001	Positive & significant effect
Coeff. of determination = 0.73	Durbin-Watson statistic = 1.81	F-statistic = 21.7	Probability value = 0.0000	

Based on the estimates of table 6, the following results are obtained:

- > The model coefficient of determination (0.73) indicates the relatively high explanatory power of the independent variables. This means that 73% of the changes in the profitability are explained by the factors considered in the model.
- > The F statistic (7.21) with a probability value of zero (less than 5 percent) indicates that the variables in the model can generally predict the variable profitability.
- > Among the variables associated with profitability, the exchange rate variable has a negative and significant effect on bank profitability at 95% confidence interval, while the effect of other variables on profitability turned out to be positive and significant.

*Model (1) estimation in presence of intra-organizational factors*

Since all the variables are at a stable level, the ordinary least squares (OLS) method is used for this instance in the interval of 2010-2019. The results hereof are summarized in table 7.

**Table 7.** Model (1) estimation with intra-organizational factors

	Coefficient	Statistic	Probability value	Hypothesis testing
Intercept	0.3600	0.139	0.0091	-
Corporate governance	0.0844	5.996	0.0000	Positive & significant effect
Inflation	0.0012	1.902	0.0670	Positive & significant effect
Exchange rate	-0.0130	-5.994	0.0000	Negative & significant effect
Economic growth	0.2258	2.658	0.0130	Positive & significant effect
Bank size	0.0174	3.344	0.0020	Positive & significant effect



Financial leverage	0.0688	4.720	0.0000	Positive & significant effect
Capital adequacy	0.0523	4.658	0.0000	Positive & significant effect
Financial risk	-0.0244	-1.977	0.0380	Positive & significant effect
Coeff. of determination = 0.89	Durbin-Watson statistic = 1.91	F statistic = 24.6	Probability value = 0.0000	

Based on the estimates of table 7, the following results are obtained:

- > The model coefficient of determination (0.89) indicates the high explanatory power of the independent variables. It means that 89% of the changes in profitability are explained by the factors considered in the model.
- > The F statistic (6.24) with a probability value of zero (less than 5%) indicates that the variables in the model can generally predict the variable profitability.
- > The variable corporate governance has a positive and significant effect on bank profitability at the 95% confidence interval.
- > Exchange rate and financial risk have a negative and significant effect on bank profitability at the 95% confidence interval. This means with an increase in exchange rate and financial risk, there is a decrease in profitability and vice versa.
- > Finally, the inclusion of intra-organizational variables in the model strengthened the relationship between corporate governance and profitability by 0.0134 units.

## 5. Conclusion and suggestions

The existence of a money and capital market and at the top of them an efficient, coherent, influential, dynamic and profitable banking system can satisfy all the needs of a resilient economy. Banks are among the oldest, most active, and most extensive financial intermediaries that, by providing optimal services and facilities on the one hand, and regulating and directing payments and receptions on the other hand, facilitate trade and commerce and significantly contribute to expansion of markets, economic growth and prosperity of the country. In fact, this system is an intermediate link between different sectors (such as housing, industry, etc.), financing them through each other (Ahmadi et al., 2015). In general, banks have a basic role in development strategies, and even in economies with advanced financial markets, banks are at the center of financial and economic activities. In developing countries and economies in transition, which have less developed financial markets, banks are generally the only institutions that are able to perform financial intermediation and help reduce investment risk by offering a variety of ways. Therefore, from the macro perspective, the profitability of the banking industry has always been the focus of both bank managers and statesmen of the countries. In this regard, it is necessary to build the knowledge the factors affecting the performance and profitability of banks. Factors associated with bank profitability can be divided into two general groups: controllable factors at the disposal of bank management (internal factors) and external or macroeconomic factors.

Another factor that has received much attention in recent years, especially after the bankruptcy of several banks in the world, is corporate governance and the way it affects profitability. Corporate governance involves a set of relationships established between the company's management, the board of directors, shareholders and other interest groups (including the government) as a control and supervisory mechanism to protect and respect the rights of the beneficiaries, especially minor shareholders, and to ensure correct implementation of the resolutions of the general meetings and prevent eventual abuses. With this issue (corporate governance) in mind, this study investigated the effect of intra-organizational factors on the relationship between corporate governance and profitability of the listed banks in the stock exchange of the Islamic Republic of Iran in Alignment with the objectives of the resistive economy, using fixed effects method for panel data. Checking the reliability of model variables showed that all variables

were at a stable level. Next, performing the F test, the type of data was found to be panel data. Further, using the Hausman test, the fixed effects method was chosen for the panel data. Finally, the research hypotheses were tested. The obtained results from the test of the hypotheses indicated that there was a significant relationship between corporate governance, inflation, economic growth, bank size, capital adequacy, financial leverage and bank profitability at the 95% confidence interval. Meanwhile, the variables exchange rate and financial risk were found to be negatively related to profitability (at 95 percent confidence) . In addition, the test of the effect of intra-organizational factors on the relationship between corporate governance and profitability showed that intra-organizational variables have strengthened the relationship between corporate governance and profitability by 0.0174 units.

The results of the present research are consistent with the findings of Mahmoudi (2018), Afshari et al. (2019), Amalia and Nogarha (2021), Djebali and Zaghdoudi (2020), Luto (2019), and Almazari (2014) and inconsistent with the findings of Mouri and Swadip (2019). Given the result of this study regarding the effect of intra-organizational factors on the relationship between corporate governance and profitability, the banks are recommended to continuously examine the extent of the impact of each of the intra-organizational factors on the strength of the relationship between corporate governance and profitability.

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### ETHICAL CONSIDERATION

Authenticity of the texts, honesty and fidelity has been observed.

### CONFLICT OF INTEREST

Author/s confirmed no conflict of interest.