

## Research Article

# Ownership, Corporate Governance, and Bank Performance in Iran

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An efficient banking system with the right monetary policy by controlling liquidity and inflation and directing resources to productive economic activities plays an essential role in economic development. However, banks' performance is influenced by various political, economic, managerial, and social factors, and the study of these factors has been considered the topic of interest to researchers. This paper uses the structural equation modeling method to investigate the effect of ownership structure and corporate governance on listed banks' performance in the Tehran Stock Exchange from 2011 to 2017. Based on the results, ownership structure dimensions have a relatively insignificant impact on corporate governance. However, the financial performance dimension has a statistically significant negative effect. The results also indicate that corporate governance is significantly associated with a positive effect on financial performance. Consequently, the results indicate that corporate governance may mitigate the negative impact that ownership structure dimensions may have on bank financial performance.

## 1. Introduction

Nowadays, the banking system's performance, especially in the optimal allocation of resources under the direct influence of investment, ensures the country's prosperity of production, employment, and economic growth. In other words, since improving the performance of banks and financial institutions in a country can improve the country's economic situation, it is necessary to study the conditions that improve the performance of banks and financial institutions [1]. On the other hand, banks operate in a unique public oversight environment and banking rules and regulations. The framework of corporate governance framework is much more complex than other companies. Corporate governance mechanisms reduce agency problems in companies, and the quality of these mechanisms is relative and varies from company to company, affecting different performance aspects. The issue of corporate governance in banks depends on managers' characteristics, the composition of board members and financial incentives, and other incentives to align critical players' activities with shareholders' interests. Senior executives may be selected among the major

shareholders or a nonshareholder hired. Most bank managers are initially selected among the shareholders, but if the shareholders do not have enough experience managing banking operations, hiring professional managers is on the agenda. Professional managers are experts needed to manage the bank's operations properly. Still, these managers may not necessarily be incentivized to maximize shareholder wealth for various reasons, including how they are selected and appointed. The hired manager's behavior may not necessarily be in the interests of shareholders [2].

Using structural equation modeling, this study investigates the relationship between ownership structure and corporate governance mechanisms with bank performance. The variables are measured by different financial measures (bank performance is based on accounting, market value, and economic measures). Using structural equation modeling allows research variables to be measured correctly and multiple relationships between variables to be well tested, which has not been considered in previous studies. As new joint-stock companies were formed in Iran, owners gradually entrusted more responsibility to managers, resulting in the separation of ownership from management becoming

one of the essential issues of organizational theory on banks' financial health.

In the following sections, first, the theoretical foundations of the research topic and the relationship between variables are explained. Then the background of related studies is presented. In the following, hypotheses and research methods have been developed. The sample, measuring the variables, and data collection are explained. Data analysis and hypotheses testing using structural equation modeling and model goodness of fit are presented. Finally, conclusions and discussion of the research findings are discussed, respectively.

## 2. Literature Review

Effective corporate governance practices are based on objective assessments of management performance. The bank's board of directors was well-structured; there was a high degree of openness; and there were independent and competent internal committees that contributed to increased trustworthiness. Enterprises that used these governance structures had a reduced credit risk, according to Broadstock et al. [3]. The results of Scherer and Scherer et al. [4] research demonstrated that these governance measures enhanced financial performance within organizations. When crises struck, specific boards could convey positive signals to depositors and other key stakeholders by building confidence [5]. Khatib and Ibrahim Nour [6] suggest that an expanded board of directors might ensure more diversified expertise, better monitoring systems, and better communication during crises.

Other studies, on the other hand, found little evidence of a substantial and direct effect of corporate governance structure and qualities on the banking industry's performance throughout the pandemic era. Demir and Danisman [7] researched 1927 banks from 110 countries during the first four months of 2020. They discovered that governance scores had no meaningful effect on bank returns during the COVID-19 outbreak. These findings corroborate those of Takahashi and Yamada [8]. They examined the effect of several variables on Japanese stock returns during the COVID-19 epidemic. Similarly, the research showed that board independence was not a significant predictor of bank performance during the epidemic [9].

Corporate governance can be considered legal, cultural, and institutional arrangements that determine the direction of companies' movement and activity. This governance's components and mechanisms include shareholders and their ownership structure; board members and composition; the company's management, which is led by the CEO; and other stakeholders that can influence the company's movement. Among these, what attracts the most attention is the increasing presence of institutional and legal investors in the circle of public company owners and the effect that this group's active presence has had on how companies are run and, consequently, their performance [10].

The influence of intellectual capital efficiency and corporate governance systems on the annual report readability of Oman's financial sector enterprises was investigated by

Dalwai et al. [11]. Design/methodology/approach: the outcomes of this study showed that higher readability of annual reports for financial sector organizations was connected with a drop in intellectual capital efficiency. On the other hand, banks indicate a favorable relationship between intellectual capital efficiency and the annual report's Flesch Reading Ease Score. Annual report readability is also adversely correlated with structural capital and capital used efficiency. Dispersed ownership and the size of the audit committee are examples of corporate governance processes that produce easy-to-read annual reports, which support agency theory.

Pourmansouri et al. [12] looked at the relationship between significant shareholders' power and the CG modality of firms. The findings of this study demonstrated that the concentration of ownership harms CGS quality, and significant shareholders cannot oppose the authority of the main shareholder; it also has a negative impact on the quality of corporate boards. Before and after the COVID-19 pandemic, the competitiveness and voting rights of significant shareholders had a negative impact on the quality of board membership. The most significant obstacles experienced in building, deploying, and managing such systems in Iranian SOEs were outlined by Beygi et al. [13]. Themes/challenges were derived from the data gathered using semistructured interviews and thematic analysis methods in an exploratory way and then examined and explained. The problems identified in the data set were then divided into four categories: "general assembly shortcomings," "ownership context concerns," "board deficiencies," and "external managerial restraints."

The influence of nonfinancial sustainability reporting (NFSR) on corporate reputation and the role of the CEO in the opportunistic behavior of businesses listed on the Tehran Stock Exchange were investigated by Zimon et al. [14]. The findings demonstrated that the CEO's power had little impact on the GSR-corporate reputation connection. Because businesses listed on the Tehran Stock Exchange are closely monitored, such as in governance, the influence of a CEO's power and the relationship of a CEO's power and GSR on corporate reputation examined in this study may not apply to these firms.

During the period 2011–2017, Salehi et al. [15] examined the association between certain corporate characteristics and management entrenchment in businesses listed on the Tehran Stock Exchange. Four corporate characteristics, namely real earnings management, predictable earnings management, institutional ownership, and board independence, were found to have a substantial link with managerial entrenchment, according to the findings. Using data from three areas, Hussain et al. [16] identified the influence of a country's governance limitations on Islamic and conventional bank income efficiency. To determine the amount of bank revenue efficiency, nonparametric data envelopment analysis was used. The study discovered that the dimensions of voice and accountability had a favorable impact on Islamic and conventional bank revenue efficiency but that political stability, the lack of violence, and corruption control had a negative impact. In addition, other aspects of regulatory quality, government efficacy, and rule of law are

all negatively correlated with traditional bank revenue efficiency.

The influence of openness and disclosure on banking financial results was investigated by Oino [17]. The focus was on evaluating openness and disclosure, auditing and compliance, and risk management as indicators of corporate governance, as well as understanding how these factors impact bank profitability, liquidity, and loan portfolio quality. In terms of statistical significance, the findings show that as the level of managerial reporting and transparency rises, capital market performance—as measured by loan portfolio quality, liquidity, and profitability—rises by 0.3046, with the effect statistically significant at a 1% level. Kamarudin et al. [18] looked at the impact of the global financial crisis on banks and the macroeconomic factors that influence profit efficiency in Bangladesh's banking industry. According to the findings, the determinants of capitalization, credit risk, and inflation have a considerable positive and negative impact on bank profit efficiency during the post-global financial crisis period. Aghimein et al. [19] looked at the technical efficiency, pure technical efficiency, and scale efficiency of Gulf Cooperation Council banks. The findings reveal inefficient resource management on the part of the managers. Furthermore, although larger banks tend to operate at constant or declining returns to scale, smaller banks are prone to operating at either returns to scale or growing returns to scale, according to the findings.

Kamarudin et al. [18] offered empirical data on the Bangladesh banking sector's profit efficiency and returns to scale. The empirical data appear to show that most Bangladesh banks have benefited from economies of scale as a result of being smaller than the ideal size or have suffered from diseconomies of scale as a result of being larger than the optimum size. As a result, cost savings or efficiency may be realized by reducing or raising the volume of manufacturing.

According to Akhigbe et al. [20], more openness lowers a company's cost of capital. They used the amount of analysts monitoring a holding company and the standard deviation of analysts' EPS projections to quantify transparency and the relationship between business transparency and bank holding company profit efficiency. Transparency has a beneficial influence on profit efficiency, according to the empirical findings. According to Kamarudin et al. [21], only in Islamic banks, revenue efficiency appears to be the critical factor contributing to lower or greater profit efficiency levels. This research also found statistically high cost, revenue, and profit efficiency differences between Islamic and conventional banks in GCC nations.

Corporate governance can play an essential role in improving corporate performance. There is a close relationship between the quality of corporate governance and corporate financial performance in capital markets. The process of monitoring and controlling the distribution of rights and responsibilities among shareholders, managers, and other participants and their decisions to serve shareholders' interests and improve company performance is made through the corporate governance mechanism. Therefore, one of the most critical factors affecting

companies' financial performance can be considered corporate governance quality [22]. The two primary goals of corporate governance are: reducing firm risk through the improvement of accountability of managers and transparency as well as improving the long-term efficiency of the firm by preventing unwise decisions and authoritarianism and irresponsibility of the firm's executive management, both of which can lead to increase financial performance.

On the other hand, the company's ownership structure is another crucial factor that can affect the company's quality of company management, decisions, and performance. The ownership structure includes the texture or composition of ownership on the one hand and the degree of concentration of shares in shareholders' hands. However, studies have shown that different ownership structure dimensions and different owners groups do not have the same type and size in influencing the company's performance and decisions. Among the various groups of shareholders, institutional shareholders' ownership is one of the essential factors that can influence companies' decisions and management and, consequently, their financial performance. So, with the increase of institutional ownership due to the process of more supervision and control over the activities of executives, we can see an improvement in financial performance.

Managerial ownership is also an essential dimension of the company's ownership structure, affecting its shareholders' interests. Due to the lack of access to sufficient information, this factor has received less attention in research conducted on the bank's corporate governance. Managers whose wealth is mainly tied to investing in a bank are more likely to pay more attention to their bank and choose the risks they take more carefully than managers who have invested their wealth in various ways. More ownership of managers and board members alone should lead to more effort by these individuals, better bank performance, and less willingness to accept risk. In the case of board members, share ownership should incentivize managers to oversee and align their activities with shareholders' interests. The greater the concentration of wealth of a significant shareholder or board member in a bank, the greater the commitment to the bank and the greater the risk acceptance [23]. So, since a company's ownership structure can develop and improve corporate governance mechanisms or the system of governance face limitations, it can be expected that a good structure and appropriate governance system facilitate effective management and control of business units and subsequently improve internal processes and better company performance. This provides the basis for improving financial performance and achieving the long-term goals of shareholders and wealth creation for them.

Khoshtinat et al. [24], in their study, examined the effect of ownership structure on the performance of banks, using data from 13 banks. They examined performance with the variables of return on assets, return on equity, and ownership structure with dimensions such as private ownership, public ownership, ownership concentration, and credit risk. The results showed that the ownership structure has an insignificant effect on the functional dimensions of banks. At the same time, the concentration of ownership and credit

risk on performance variables has a significant inverse effect on corporate governance and significantly affects banks' performance. Ozili and Udiale [25] studied the relationship between ownership concentration and banks' profitability in developing countries. Their study showed that banks with a high degree of concentration present higher returns on assets, net profit margins, and revenue-generating power. Banks with a lower degree of concentration, on the other hand, have higher equity returns.

Rezaei and Mohammadzadeh [26] examined the impact of corporate governance on companies' financial performance and financial crises. They have tested the effect of corporate governance dimensions, including disclosure and transparency, the composition of the board, shareholders' voting rights, and ownership structure on companies' performance dimensions, including the Tobin Q index, the total return on assets, and return on equity. Their results showed that corporate governance's quality significantly affects total return on assets, return on equity, and company value. In contrast, an insignificant effect on the financial crisis of companies has been observed.

Mirchandani and Gupta [1] examined the impact of corporate ownership structure and governance on selected banks' performance in the UAE. The study results showed a significant relationship between corporate governance and bank performance. However, the ownership structure has an insignificant impact on bank performance. Faraji Dizaji et al. [27] investigated the effect of rent and political development on the independence of the Central Bank in oil-exporting countries. The results also indicate a positive association between central bank independence and improving the quality of political institutions. Therefore, according to the results, the increase in the rent income reduces the central bank's independence. Also, increasing the quality of institutions increases the central bank's independence.

Separation of ownership from management has led to the concept of corporate governance, which includes various mechanisms to monitor the work of executives to ensure efficient decision-making, maximize the value of the company, and affect bank performance. Hence, the relationship between the characteristics of the relationship between corporate governance and corporate performance and corporate governance on bank performance guidelines has been discussed in the literature of many companies. There is agreement on the relationship between corporate governance practices and company performance. However, this relationship is not very simple and direct. Especially during the global financial crisis, many companies went bankrupt despite effective corporate governance. The importance of this issue has been studied in many studies. One of the significant issues and challenges for companies surveyed in Iran has been addressed in this study. This study examines the effect of ownership structure and corporate governance components on bank performance. Corporate governance mechanisms, the board of directors, and supervisory mechanisms are determined by a company's structure, which includes the composition and concentration of ownership. Banks' activities are implemented and monitored through the corporate governance system. Therefore,

the quality of banks' activities and performance will be primarily determined by their ownership structure and the quality of their governance. In the first part of the study, we simultaneously examine the effect of corporate governance and ownership structure on performance. A market-based measure (EVA) has been used to measure performance in addition to traditional accounting indicators, which provides an optimal measure of financial performance. Furthermore, the research approach and methodology are structural equation modeling, which has not been used in previous studies. It can therefore be a new approach in this regard.

### 3. Research Hypotheses

Based on the theoretical foundations and background conducted in this research, the following hypotheses have been developed and tested:

H<sub>1</sub>: The ownership structure significantly affects banks' corporate governance

Today, the performance of banks in equipping and allocating resources optimally can boost production, create jobs, and increase economic growth. An efficient banking system with the right monetary policy by controlling liquidity and inflation and directing resources to productive economic activities plays an essential role in economic development. However, the performance of banks is influenced by various political, economic, managerial, and social factors, and the study of these factors has been one of the topics of interest to researchers. In this study, the hypothesis of examining the dimensions of corporate ownership structure and governance over the performance of banks has been studied.

H<sub>2</sub>: The ownership structure has a significant effect on banks' performance

The most crucial feature of joint-stock companies is the separation of ownership from their management. Over the past 30 years, many cases of conflict of interest between groups and how companies deal with such conflicts have been raised by economists. These are generally referred to as "representation theory" in management accounting. The ownership structure is one of the essential issues of corporate governance that can affect the efficiency of companies by influencing managerial motivations. This study aims to investigate the asymmetric effect of ownership structure on banks' risk-taking behavior.

H<sub>3</sub>: Corporate governance studied that the relationship between ownership has a significant effect on banks' performance

Given that the issue of corporate governance has attracted a great deal of attention from economic actors in recent decades, in many countries, the ranking of companies in terms of corporate governance has begun, and after the financial crises of several Asian countries, laws to improve governance A company has been established. The question in this research is whether corporate governance practices

are improving in Iran and, in particular, whether it is possible to maintain and improve the financial health of Iranian commercial banks by using corporate governance procedures. Considering the major and significant effects of privatization, especially in connection with the privatization of banks and the conversion of credit financial institutions into banks, and the fact that many private banks operate in the primary and secondary capital markets, the effect of corporate governance on the financial health of commercial banks Iranian can be studied.

H<sub>4</sub>: Corporate governance is mediating the relationship between ownership structure and bank performance

In other words, ownership of a government entity such as a bank has several drivers for overseeing financial reporting and improving corporate performance. Government-centered corporate governance system can potentially influence government industrial policies.

#### 4. Research Design and Data Collection

According to its purpose, the present study is considered applied research since investors can use its results, managers, shareholders, capital market analysts, and listed banks on the stock exchange. In terms of the research methodology, it is a descriptive correlational study. Additionally, it is a documentary in terms of data collection. In addition to the 20 banks studied, included in the study are Mellat, Tejarat, Saderat, Pasargad, Parsian, Eghtesadnovin, Sina, Karafarin, Sarmayeh, Dey, Ansar, Gardeshgary, Hekmat Iranian, Iran Zamin, Saman, and Tose'e listed on Tehran Stock Exchange. The census examines Ayandeh, Postbank, and Ayandeh. We collected the data required to measure the variables from the Stock Exchange Organization database, the mentioned banks, and Iran's central bank from 2011 to 2017. We collected the data for the research variables from the audited annual financial statements of listed banks and the Tehran Stock Exchange and Rahavard Novin financial software information databases.

4.1. *Research Variables.* According to the research objective and to test the hypotheses, the variables are measured as follows.

4.1.1. *Financial Performance.* The dependent variable in this study is the financial performance of banks, which has been measured using three measurable components, including Tobin's Q ratio, return on equity ratio (ROE), and economic value added (EVA).

Tobin's Q ratio is calculated as the total book value of liabilities plus the equity market value divided by the book value of total assets.

Return on equity is measured by the net profit ratio divided by total equity.

Economic value added (EVA) is calculated as follows:

$$EVA = NOPAT_t - (WACC_t \times Capital_t), \quad (1)$$

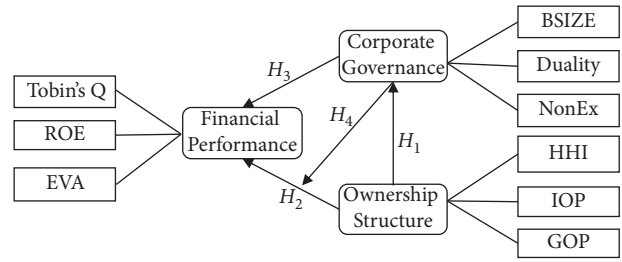


FIGURE 1: Conceptual framework and relationship between the research variables.

where  $NOPAT_t$  is the net operating profit after tax for year  $t$ , in the calculation of which the effect of noncash transactions are eliminated and tax savings resulting from financing costs are deducted from the profit and is calculated by the following equation:

$$\begin{aligned} \text{Operating profit after tax} = & \text{income adjustments} \\ & + \text{cost adjustments} \\ & + \text{interest tax shield} \quad (2) \\ & - \text{interest expense} \\ & + \text{after - tax profit,} \end{aligned}$$

$WACC_t$  is the weighted average cost of capital for year  $t$ , and  $Capital_t$  is the total capital employed in the business for year  $t$ .

4.1.2. *Ownership Structure.* To measure that as an independent variable, three components, including the Herfindahl-Hirschman index, institutional ownership ratio, and government ownership ratio, were used as follows:

Herfindahl-Hirschman index (HHI) measures the degree of concentration of ownership in the company. So that the closer the calculated index is to number one, the greater the concentration of ownership, and the closer this index is to zero, the greater the dispersion of ownership, calculated as follows:

$$HHI = \sum_{i=1}^k s_i^2, \quad (3)$$

where  $S_i$  is the proportion of ownership of each shareholder in the company  $i$ .

Institutional ownership ratio (IOP) is measured by the ratio of shares owned by financial institutions such as banks, insurance companies, and pension funds to the company's total stock under review.

Government ownership ratio (GOP) is measured by the ratio of shares owned by government-affiliated organizations and companies to the company's total shares under review.

4.1.3. *Corporate Governance.* In this study, corporate governance plays the role of a mediator variable, which is measured by the three components of board size, the

proportion of nonexecutive members, and the duality role of the CEO as follows:

The number of board members measures board size (BSIZE).

NonEx ratio is measured by the number of nonexecutive members ratio to the total number of board members.

The CEO's duality role is considered a dummy variable that takes one if the CEO holds the chairman of the board and zero otherwise.

Figure 1 presents a conceptual framework to illustrate the relationships between the variables for testing the research hypotheses.

**4.2. Data Analysis.** The structural equation modeling method has been used to analyze the data and test the research hypotheses. The first generation of structural equation methods is covariance-based methods. The primary purpose is to validate the model and require high-volume samples to work. The second generation of structural equation methods is variance-based models. Later renamed the partial least squares (PLS) method, these methods provided different data analysis methods than the first generation. The most important software for this method is smart PLS. Researchers have cited several reasons for using the method, and the most important reason is the superiority of small samples. The following reason is the existence of abnormal data that researchers face in some studies [28].

In this research, the goodness of fit for each latent variable is investigated after standardizing the calculated values for the components of each observed variable based on the values of their factor loads and significance. Then the hypotheses are tested based on path coefficients, and the latent variables and their significance are discussed.

## 5. Results and Discussion

The following section presents descriptive statistics of the research variables for 126 observations. Table 1 shows the summary of descriptive statistics of the variables. As seen, the mean of Tobin Q equals 2.234 with a standard deviation of 1.551. Return on equity equals 0.062 with a standard deviation of 0.091, and economic value added equals 279,028 Rls with a standard deviation of 102,126 Rls. On the other hand, the mean of Herfindahl–Hirschman is equal to 0.592 with a standard deviation of 0.283. The ratio of institutional ownership is 0.746 with a standard deviation of 0.229, and the ratio of government ownership is 0.096 with a standard deviation of 0.0208. Also, the mean board size equals 6.402 with a standard deviation of 2.127, and the ratio of non-executive board members equals 0.518 with a standard deviation of 0.314. The table does not include descriptive statistics of the CEO's variable dual role as a dummy variable with zero values and one.

As mentioned in the previous section, three components have been used to measure each research variable. Therefore, it is necessary to use structural equation modeling to test the goodness of measuring each latent variable using observed variables. Then these variables are used to test the

TABLE 1: Descriptive statistics of research variables.

Variable	No.	Mean	Std. Dev.	Min	Max
Tobin's Q	126	2.234	1.551	1.012	4.029
ROE	126	0.062	0.091	-0.127	0.345
HHI	126	0.592	0.283	0	0.96
IOP	126	0.746	0.229	0.069	0.994
GOP	126	0.0396	0.0208	0	0.10
BSIZE	126	6.402	2.127	4	11
NonEx	126	0.518	0.314	0.214	0.736

hypotheses. The measurement of latent variables is presented as follows.

**5.1. Ownership Structure.** As mentioned previously, Herfindahl–Hirschman index (HHI), the ratio of institutional ownership (IOP), and the ratio of government ownership (GOP) were used to measure the ownership structure variable. Table 2 shows the goodness of fit for the variable. The table shows that the value of  $\chi^2$  normalized to the degree of freedom is less than 3, and its  $P$  value is less than 0.05. On the other hand, the goodness of fit index (GFI) value equals 94.558. In contrast, the adjusted value (AGFI) equals 92.312, more than 90%. Also, the root value of the mean squares of the estimation error (RMSE) is equal to 0.014 and less than 0.05. Therefore, according to the above values, it can be concluded that the measurement of the ownership structure's latent variable based on the model's apparent variables is significantly appropriate.

**5.2. Corporate Governance.** Three variables, including board size (BSIZE), the ratio of nonexecutive board members (NonEx), and the dual role of the CEO (duality), have also been used to measure the corporate governance of the banks. Table 3 shows indices of the goodness of fit for the variable. The table shows that the value of  $\chi^2$  normalized to the degree of freedom is less than 3 with a significance level of less than 0.05. On the other hand, the goodness of fit index (GFI) value is equal to 94.368; its adjusted value (AGFI) is 92.212; and both are more than 90%. The root value of the mean squares of the estimation error (RMSE) is equal to 0.015 and less than 0.05. Therefore, the obtained values indicate that the mentioned observed variables can be significantly used to measure corporate governance's latent variable.

**5.3. Financial Performance.** Three variables, including Tobin's Q ratio, ROE, and EVA, have already been used to measure the latent variable of financial performance. Table 4 illustrates the indices of the goodness of fit for the variable. As seen in the table, the value of  $\chi^2$  normalized to the degree of freedom is less than 3 with a significance level of 0.036 (less than 0.05). Also, the goodness of fit index (GFI) is equal to 94,062 with an adjusted value (AGFI) of 91.816 and more than 90%. On the other hand, the root value of the mean squares of the estimation error (RMSE) for the variable is equal to 0.016 and less than 0.05. Therefore, as in the previous variables, it can be said that the goodness of fit of the

TABLE 2: Goodness of fit indices of ownership structure.

$\chi^2/df$	P-value	RMSE	GFI	AGFI
2.92	0.030	0.014	94.558	92.312

TABLE 3: Goodness of fit indices of corporate governance.

$\chi^2/df$	P-value	RMSE	GFI	AGFI
2.73	0.032	0.015	94.368	92.122

TABLE 4: Goodness of fit indices of financial performance.

$\chi^2/df$	P value	RMSE	GFI	AGFI
2.43	0.036	0.016	94.062	91.816

latent variable of financial performance based on the apparent variables is significantly appropriate.

**5.4. Model Estimation.** After analyzing the goodness of fit to measure research variables, a structural model was obtained, indicating the relationship between latent variables of research. Figure 2 shows the general model of the relationship between research variables using the partial least squares (PLS) method.

Finally, based on the structural equation modeling according to the figure, Table 5 shows the factor loading of the observed variables with significance levels. Based on the value of the  $t$ -statistic and significance level related to observed variables, the table's findings show that all observed variables significantly affect (at least 90%) latent variables.

In the following, CR and AVE indices have been used to evaluate the convergent reliability and validity of the structures, using equations (4) and (5):

$$CR = \frac{(\sum \lambda)^2}{(\sum \lambda)^2 + (\sum \delta)}, \quad (4)$$

$$AVE = \frac{\sum \lambda^2}{n}, \quad (5)$$

where  $\lambda$  represents the standardized factor load of the indices and  $\delta$  represents the standard error symbol. CR coefficient greater than or equal to 0.7 indicates good reliability. A value of at least 0.8 means very good reliability. If the value is greater than or equal to 0.9 shows excellent reliability of the indicators. If the AVE index for each variable is more than 0.5, the construct in terms of convergent validity is appropriate [28]. Table 6 shows the results of these indicators for latent variables. As it is seen, the CR coefficients for all variables indicate the good reliability of the structure. Since the AVE coefficients are higher than 0.5, the constructs' convergent validity can be observed as well.

Divergent validity, which indicates a latent variable with its indices compared to the relationship between that variable and other variables, is examined as follows. Appropriate divergent validity of a model indicates that one variable in the model interacts more with its indices than with other variables. Therefore, each variable's AVE

coefficient must be greater than the correlation between the variable and others [29]. Table 7 shows the Fornell-Larker matrices and the divergent validity of the variables. The primary diameter of the variables' correlation matrix shows the variables' square root. As can be seen, the AVE index's square root for both variables is more significant than their correlation values, so it can be concluded that divergent validity is appropriate for all three variables.

After examining the goodness of fit of the variables and measuring the reliability and validity, Table 8 represents the structural model's result of testing the hypotheses. As can be seen, the direct effect of research variables on each other and the indirect effect of ownership structure on financial performance due to corporate governance have been estimated using path coefficients. Their significance level has been shown as well.

The findings of Table 8 show that the direct effect of ownership structure (OS) on corporate governance (CG) with a path coefficient of 0.44 with a significance level of 0.114 is insignificant, while the effect of ownership structure (OS) on financial performance (FP) with a coefficient of  $-0.68$  and a significant level equal to 0.015 is significant. The direct effect of corporate governance (CG) on financial performance (FP) with a coefficient of 0.78 and the significance equal to 0.005 also shows the significance of the estimated coefficient. The findings of the table also show that the indirect effect of ownership structure (OS) on financial performance (FP) through corporate governance (CG) as an intermediate variable with a coefficient of  $-0.57$  and a significant level of 0.041 shows that the indirect effect is significant as well. In other words, corporate governance reduces the severity of the ownership structure's negative impact on bank performance. Based on the above findings, it can be concluded that the first hypothesis of the research failed to confirm. In contrast, the second, third, and fourth research hypotheses and corporate governance's mediating role have already been confirmed. The results are consistent with parts of the findings of Nakhaee and Zahraei [2], Akimova and Schwodiauer [30], Spong and Sullivan [31], Wanjiru et al. [32], Ozili and Uadiale [25], and Mirchandani and Gupta [1] while tending to be inconsistent with some of the findings of, Rahimian et al. [33], and Shahikitash et al. [34].

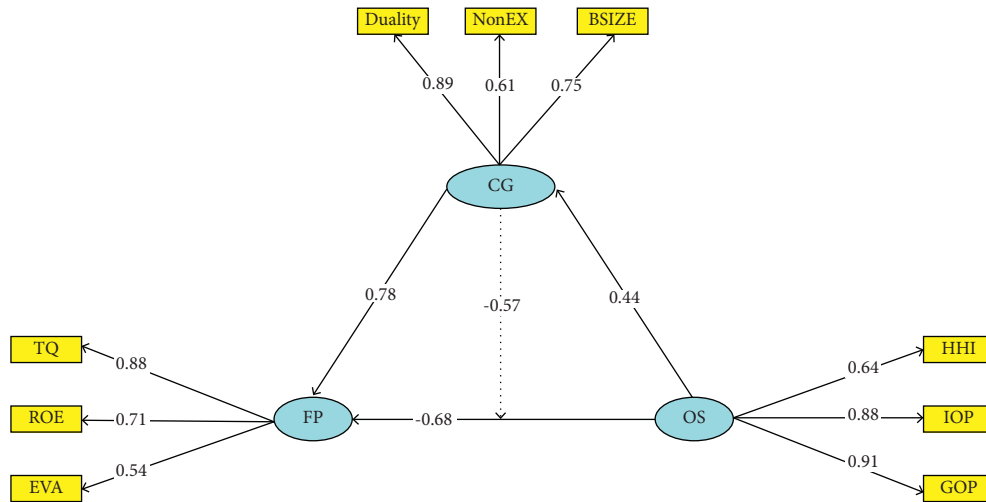


FIGURE 2: Measurement and structural model.

TABLE 5: Significance of the measurement model.

Latent variables	Observed variables	Factor loading	<i>t</i> value	<i>P</i> value
Ownership structure (OS)	HHI	$\lambda_1 = 0.64$	2.291	0.022
	IOP	$\lambda_2 = 0.88$	3.151	< 0.001
	GOP	$\lambda_3 = 0.91$	3.258	< 0.001
Corporate governance (CG)	BSIZE	$\lambda_4 = 0.75$	2.685	0.004
	NonEx	$\lambda_5 = 0.61$	2.184	0.030
	Duality	$\lambda_6 = 0.89$	3.186	< 0.001
Financial performance (FP)	Tobin's Q	$\lambda_7 = 0.88$	3.151	< 0.001
	ROE	$\lambda_8 = 0.71$	2.542	0.011
	EVA	$\lambda_9 = 0.54$	1.933	0.054

TABLE 6: Results of reliability and validity of the constructs.

Latent variables	Coefficient CR	Coefficient AVE
OS	0.762	0.611
CG	0.791	0.638
FP	0.906	0.708

TABLE 7: Fornell–Larker matrices for divergent validity.

Variables	OS	CG	FP
OS	0.782		
CG	0.517	0.799	
FP	0.623	0.638	0.841

TABLE 8: The effect of latent variables on each other.

Effect	Latent variables	Path Co.	<i>T</i> value	<i>P</i> value
Direct effect	OS ----> CG	$\gamma_1 = 0.44$	1.575	0.114
	OS ----> FP	$\gamma_2 = -0.68$	2.435**	0.015
	CG ----> FP	$\gamma_3 = 0.78$	2.793***	0.005
Indirect effect	OS ----> CG ----> FP	$\beta_1 = -0.57$	-2.041**	0.041



According to the obtained results, some recommendations can be made as follows:

- (1) Capital market policymakers and institutional shareholders should be aware that the presence of nonexecutive members of the board of directors cannot reduce agency problems to help the company perform better, so try to make more use of executive members' presence.
- (2) Given the importance of institutional investors and significant shareholders in the management of companies, mainly banks, it is suggested that these shareholders have a more active role in monitoring and controlling the activities of companies and align the interests of shareholders and managers to reduce agency problems. Furthermore, ultimately help improve company performance.
- (3) It is also suggested that the board of directors, shareholders and auditors, and auditing firms are getting more informed about corporate governance issues, resulting in playing a proper role in corporate governance and thus increasing the company's value.
- (4) Future researchers are encouraged to consider other performance indices such as the MVA index and the BSC and EFQM methods for conducting similar research.

## 6. Conclusion

Estimating the structural equation model indicates that all observed variables significantly affect latent variables. In other words, latent variables can be measured adequately based on observed variables. The results show that the direct effect of ownership structure on corporate governance is insignificant, meaning that the mechanism of corporate governance is not affected directly by ownership structure. Therefore, the first hypothesis of the study failed to confirm. Also, the ownership structure has a significant negative effect on financial performance. It means that by increasing the concentration of ownership at the disposal of a limited number of shareholders and the ratio of institutional to state ownership, the financial performance of banks decreases significantly and vice versa. Therefore, the second hypothesis of the research is significantly confirmed.

On the other hand, the effect of corporate governance on financial performance is also significantly positive, which shows that improving the corporate governance mechanism can significantly improve bank performance, so the third hypothesis of the study is confirmed as well. The results also show that the indirect effect of ownership structure through corporate governance on bank performance is significant. The fourth hypothesis is also confirmed. It means that good corporate governance reduces the severity of the ownership structure's negative impact on the bank performance under review.

The results show that the shareholding of government-affiliated institutions and companies and financial institutions, especially when they have a majority stake,

causes these shareholders to pursue their own goals and interests instead of considering the total interests of shareholders and the value of banks, leading to poor financial performance. This issue supports the hypothesis of convergence of interests, according to which large institutional shareholders have a strategic alliance with the company's management. As a result, instead of pursuing all shareholders' interests, managers will be given to large institutional shareholders and work in their best interests. Also, according to the strategic alignment hypothesis, institutional shareholders' expectations sometimes may be tied to managers' interests. Due to the matching of the interests of the two groups, microshareholders' interests are ignored, reducing the expected beneficial effects.

On the other hand, appropriate corporate governance mechanisms can increase the financial performance of banks because one of the possible reasons for the above conclusion is the participation of executive and nonexecutive directors of the board in the activities and their supervisory role in banking operations. There is also evidence that the board's large size can help CEOs through consulting play an influential role in corporate performance.

## Data Availability

The data used to support this study are available from the corresponding author upon request.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

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