Journal of Money and Economy
Vol. 13, No. 1, Winter 2018
pp. 31-50

Bank's Corporate Governance: Quantifying the Effects in Iranian Banking Networks

Esmael Ghafari* **Vahid Mohammadrezakhani†**
Hadi Heidari‡

Received: 10 Sep 2018 Approved: 28 Jul 2019

The most important tool for promoting the bank's stability and health is the establishment of a standard corporate governance structure for managing the bank's business. Redesigning the relationships between bank management, shareholders and the rest of the bank's stockholder, including the objectives, the risk and audit indices, and internal control of the bank, is recognized as the foundation of corporate governance. Good corporate governance in a bank increases productivity reduces financial risk and enhances systemic sustainability. Bad corporate governance increases the likelihood of a bank's bankruptcy and creates risks that are likely to contagion the entire banking network. In this paper, considering the importance of the corporate governance in the banking network, and issuing Central Bank circular in 2016, we will review corporate governance requirements, as well as quantify its effective indicators. To determine the corporate governance structure, we have introduced and quantified several important indicators about the board structure, internal control, and auditing of the banks. The period for the analysis of corporate governance in the banking network by indicators is 2011 to 2017. This information is extracted from financial statements or through the official website of the bank network. The results confirm that good corporate governance affects financial statement and precautionary ratios in banks.

Keywords: Corporate Governance, Quantification, Iranian Banking Network, Financial Ratios.
JEL Classification*:* G21, G34

1 Introduction

Corporate governance is related to how the bank's business is managed, and it is referred to as organizational, managerial, and regulatory relationship, between bank management, shareholders, and other stakeholders. Corporate governance includes all the processes and structures that help financial institutions to manage and lead, for ensuring their soundness and health.

* Shahr bank, Iran; esghafari@yahoo.com (Corresponding Author)
† Shahr bank, Iran; mohammadrezaei09@gmail.com
‡ Banking Department, Monetary and Banking Research Institute of the Central Bank of Iran; h.heydary@cbi.ir

Hence, the implementation of good corporate governance' standards in the banking network, given the bank base of the economy, can affect economic development. Good corporate governance in the banking network can create an environment that can increase bank efficiency, systemic stability in the financial sector, and reduce financial risk. Day-to-day activities base on determined risk profile and following internal circulars and regulations cause protected the depositors and other shareholders rights. Bad corporate governance increases the likelihood of bankruptcy and bank insolvency. The bankruptcy of a bank imposes a heavy cost for the economy, due to the ineffectiveness of the structure of the Deposit Guarantee Fund in the banking networks, bank failure contagion to other financial institutions and the financial markets. In this regard, and by emphasizing on the importance of improving the quality of corporate governance infrastructures in financial institutions, international organizations such as the Basel Committee have published important documents in recent years. Based on 2007 financial crisis and the disadvantages of current governance, such as lack of adequate board's supervision and inefficient banks risks management, these issued documents upgraded in 2010 by "Principles for Improvement of Corporate Governance."

According to these documents, good corporate governance has three main pillars:

- The short, medium and long -term goals of the bank should be determined.
- Specified the tools needed to achieve these goals in the bank.
- To monitoring and supervision in the framework of risk management, audit and internal control, the structure of software and hardware must be developed.

In the long run, the bank tends to reduce capital costs and is willing to accept the lower risk, which may ultimately lead to accepting lower profits by shareholders. The main problem of implementing a good corporate governance in the Iranian banking network is the lack of a legal structure to follow the rights of minority shareholder of the bank, minimum accountability of majority shareholders, and absence of the appropriate incentives for the board of directors and managers to keep track the strategic goals of the bank. In line with the responsiveness of business admiration of the banks, the key elements of good corporate governance in the bank should include:

- In good corporate governance, the participation of stockholders measured.
- Determine the duties, decision-makers, and accountability for each risk profile of the bank.
- Employing strong financial risk management (independent lines of business), adequate and sufficient internal control systems (including

Internal coherent auditing systems), and design practical process along with necessary dissuasive rules.

- Ensuring compliance for internal guidelines and external ardencies and alignments of them with bank value.
- Provide financial incentives for employers and managers base on existing strategies that accepted by the board includes promotions and punishments.
- Transparency of internal information flow.

Table 1
Main Stakeholders and Responsibilities in Corporate Governance framework for Banks

Importance		**duties**	**The main actors**
operational level	policy level		
		Systemic	
Direct	crucial	Stage explanation	**Legal and Regulatory Authorities**
indirect	Indirect (supervisory)	Supervisory	**board of the Bank**
		Organizational	
indirect	indirect	Appointment of basic actors	**Shareholders**
Important	crucial	Policy setting, shock monitoring. Confirm the internal change.	**Board of Directors**
crucial	crucial	Implementing policies and strategies, managing daily operations	**CEO**
crucial	Indirect (matching)	Reviewing bank policies in corporate governance, risk management processes, and control systems	**Internal Audit / Internal Audit Commission**
		External	
Very important	Indirect (evaluation)	Statement announcement and Evaluate them	**independent auditors**
indirect	Direct	Responsibly	**Foreign / Public stakeholders**

Source: Research Findings.

One of the most important parts of supervisory structures as the third pillar of good corporate governance in banks is to create a regular and accountable structure for risk managing in bans. In this regard, Table (1) summarizes the responsibilities of key actors involved in bank governance and risk management.

In May 2012, the Central Bank of Iran issued an ordinance "Corporate Governance Requirements for private financial Institutions" state the infrastructure for establishing good corporate governance in banking networks system. In this regard, the functioning of the internal control system, the board of directors and chief risk officer, and the coordination between these departments of the bank is identified. This ordinance similar to Tehran Stock Exchange circular does not point out to some important issues such as risk and compliance. The second part of the article will be discussed in more detail on the underlying rules of the Central bank ordinance. Therefore, in the following section of this paper, the latest international issues discussed in the principles of a good governance process in banks is explained. Then, the roles and responsibilities of the main players for the corporate governance process of a bank are reviewed. Therefore, in the first section, we have reviewed the theoretical and experimental literature in this area. In the second part, we propose solutions to deploy good governance in the banking network. In the third section, we introduce the methodology for quantitative evaluation of corporate governance which of directly involved in good corporate governance and risk management. In the fourth and fifth sections, respectively, we describe choosing important elements to determine the criteria of good corporate governance and policy recommendations selection to develop effective corporate governance in the Iranian banking networks.

2 Theoretical and Empirical Literature of the Subject

A quantitative assessment of corporate governance in the last decade and has been explicitly addressed in large firms in developed countries. For example, we can point out to benchmarks that introduced by Standard & Poor's(s&p). This company provides corporate governance ratings by using two different approaches. S&P employs 98 items to disclosure and transparency (T & D) studies, and its corporate governance rating (CGS) is based on 80 to 100 factors. Transparency and Disclosure Studies to rank corporate governance qualification of the institution have used as a combination of features. In this way, if there is the desired attribute, they assigned one to those variables and otherwise zero, and then these numbers are summed together. According to the Standard & Poor's Institute, the method used in transparency and disclosure studies can be used for corporate governance comparison. The institution explains that "the corporate governance ranking cause deeper analysis with more detailed about the corporate governance task of companies." In Transparency and Disclosure Studies, Standard & Poor's analysts carefully review annual reports and use a checklist include 98 items and feature information. This information divide into three categories: ownership structure and investor relations, financial disclosure, and transparency about board structure and management processes. Deminor is another scoring company that created the "ranking of governance" system. This institution rate about 249 to 269 companies, which includes the top 300 European companies for time interval 2000-2001. This rating agency operates based on about 300 different criteria, which can set up these criteria in four major categories: (a) the rights and obligations of shareholders; (b) the domain of acquisition activities by the competitor; (c) disclosure of corporate governance; (d) Board structure and performance. Many of the studies are based on the governance indexes created by these institutions. Cremers and Nair, (2005) develop corporate governance indicators that used Credit Lyonnais Securities Asia information form 25 emerging economies. The mentioned research has a questionnaire that includes 57 binary questions, and the questions categorize into seven categories: discipline, transparency, independence, accountability, responsibility, justice, and social knowledge. Each category takes a weight of 0.15, except the last category weighting 0.10. Durnev and Kim (2005) and Patel and others (2002) prepare their report by disclosure and transparency index, which was calculated by S & P.

Durnev and Kim considered Credit Lyonnais Securities Asia indicators subjective, but the S & P index considered objective. Brown and Caylor (2006) created a corporate governance rating for US firms from Institutional Shareholder Services database. Bauer and others (2004) used the Deminor rating. Black and others (2006) used a subset of 38 objective questions from the Korean stock market studies and eliminated all subjective questions. They categorized the indices into four categories, by a weight of 0.25. These categories are shareholders' rights, the board of directors, independent managers, and financial disclosure and transparency. Normally the parameters of corporate governance rating agencies included small variable about business outcomes (i.e., profitability and stock values); because these parameters are not well measured or have a low relation with business results. Alternatively, some researchers prefer to develop their parameters.

Barontini and Siciliano (2003) have defined several virtual variables that represent the takeover risk and depend on the following factors: the existence of majority shareholder, the voting rights of foreign shareholders, and the existence of preferred shareholders. Campos et al. (2002) developed the corporate governance rating system as a benchmark for corporate governance quality by using corporate governance principles in OECD countries. This corporate governance rating is a combination of 15 factors categorized into three groups. These groups are as follows: ownership and shareholder protection (transparency of ownership, one share / one vote, acquisition defenses, and board announcements), board of directors (Size of board of directors, dependent and independent members, policy and guidelines of committees) and transparency and disclosure i.e. (transparency, accounting standards, and independent audits, on-time disclosure). Gompers and et al. (2003) calculated the new corporate governance index for 1,500 US companies, which includes shareholders' guidelines to prevent acquisition by opponents. These are interpreted by the Investor Accountability Research Center and objectively measurable. The Governance Index (GI) made as follows: For each firm, Gompers and et al. (2003) assigned one to variables that restrict shareholder rights (this means increased management power).

In summary, the Governance Index is a simple sum of these variables. Gompers and et al. (2003) also calculates the index for the subcategory of the guideline. Although this index cannot accurately reflect the relative impact of different guidelines, this indicator has the advantage in transparency for replication. This index does not require any judgment for efficacy or impact of the guidelines; Gompers and et al. (2003) only calculates the effect on the balance of power. The study of Gompers and et al. (2003) attracted much attention from the media, academic institutions, and investors, and academic researchers used the governance index for their studies.

For example, Cremers and Nair (2005) examined how the interaction between the governance index and institutional ownership affects stock return rates. Klock and et al. (2005) and Chava and et al. (2004) researched how the governance index affects the debt cost of corporate. Fahlenbrach (2003) analyzed how the governance index affects the CEO's salaries and compensation. Chi and Lee (2005) showed that decreasing the governance index (that is the concentration of vote in some shareholders) could limit the free cash flow of firms. (Jensen 1986). Bebchuk et al. (2004) use a subset of the six guidelines from 24 guidelines used by Gompers and et al. (2003) as the "index of entry." Gillan and et al. (2003) build their governance index, which has overlap with some components of Gompers and et al.

To sum up, the quality of corporate governance is subjective and can be challenging. Governance-Rating studies are based on the assessment of standards from the past administration and rely on historical data. Standards and index weights are different between studies. Therefore, the selection of a set of governance standards leads to create of subjective elements for the study of the ranking of governance. Also, researchers can give different weights for these ranking standards, which leads to more hypothetical. Besides, since the standards are assessed base on specific regulations in each market, it may change over time, then it is difficult to achieve robust results. Finally, it is worth noting that governance-rating surveys are developed based on the best practices or effective governance. We present some of these variables in the next section.

3 Components of Strong Corporate Governance

Policymakers in some countries, as well as institutions such as the Organization for Economic Co-operation and Development (OECD), the Bank of International Settlement, the International Monetary Fund, and the World Bank, pay more attention to corporate governance than before. These attentions are due to several reasons: (1) The growth of institutional investment organizations, including pension funds, insurance companies, mutual funds, and high-leveraged institutions, especially in large industrial economies. (2) The serious failure of the simultaneous supervision and control of public corporations in English countries, especially the United Kingdom and the United States, causing non-optimal development of economic and social inequality. (3) The shift from the traditional corporate governance base on the shareholder value, which includes a wider range of stakeholders. (4) The impact of the increasing financial markets globalization and the global tendency for deregulation of the financial sector.

The Banking Supervisory Committee (Basel Committee) issued an important guideline to assist banking supervisors in promoting the adoption of corporate governance in 1999. This guide extracted from principles of corporate governance that were published by the OECD to assist members in evaluating and improving the corporate governance framework. More details of the OECD Corporate Governance Principles are available in the publications.

The mentioned documents about corporate governance have attracted the attention of international organization by happening bankruptcies or some credit institution insolvency. Subsequently, an improved document of corporate governance principles is published in the OECD countries in 2004, and the Basel Committee updated its corporate governance principles for banking organizations in 2006. The principles of corporate governance are not identified as an additional requirement for capital adequacy regulation (Basel II). These principles are applicable regardless of whether a bank wants to adopt a Basel Framework. In February documents 2006, the principles are explicitly stated:

Principle 1: Board members should deserve their position, have a good understanding of their role in corporate governance, and be able to judge the administration of the bank effectively.

Principle 2: The Board of Directors shall approve and monitor the strategic objectives of the Bank and the organizational values.

Principle 3: The board of directors should set out clear lines of responsibility and accountability throughout the organization.

Principle 4: The Board of Directors shall ensure from consistent oversight on chief managers of banks align with bank policies and strategies.

Principle 5: The board members and senior managers must use the recommendation of internal auditors, independent auditors, and internal controllers effectively.

Principle 6: The board should ensure that compensation policies are consistent with the corporate culture, long-term goals, strategy of the bank.

Principle 7: The bank must be managed transparently.

Principle 8: The CEO must understand the bank is operating structure; including where the bank operates in the jurisdiction area, which impedes transparency (know your structure).

The philosophy behind the Basel Committee's principles is that appropriate governance can be achieved independently from the type of bank organization. Four important forms of supervision must exist in the organizational structure of each bank to ensure the appropriate controls; (1) Supervision by the board of directors or supervisory board; (2) Supervision by those do not involve in the routine operations of banks. (3) Establish direct supervision line for different business lines. (4) Risk management, compliance, and independent auditing functions. Implementation of the governing principles of the Basel Committee should be proportional with the size, complexity, structure, economic importance, and risk profile of the bank and the stockholders. The application of corporate governance standards in each jurisdiction area depends on the relevant laws, regulations, guidelines, and regulatory expectations.

Also, parallel with these international efforts, corporate governance attracts the attention, both in public policy and as a response to the negative developments in the corporate sector and financial markets. Because of the reason, some crisis in these sectors results from inadequate corporate governance. For example, the COSO[1] Guidelines include an internal control framework and a risk management framework to reduce the risk of asset loss, ensure the validity of financial statements and legal compliance, and promote productivity. Important components for establishing strong corporate governance in our banking network following the issue of the chapter in the CBI’s Guidelines about corporate governance Requirements discuss below.

3.1 Independent Managers

In line with Chapters 3 and 4 of the Central Bank's Guidelines on the Characteristics, Structure, and Functioning of the Bank's Board of Directors, the focus is on the expertise and background of the Board of Directors as well as their duties by considering the complexity of the Bank. Board independence derives from the intermediary theory emphasized in studies (Fama and Jensen 1983). Indeed, based on long discussion independent of managers argued in the financial management literature, that the board members with the majority of independent directors have a greater influence on management oversight. (Baysinger and Butler (1985); Rosenstein and Wyatt (1990); Byrd and Hickman (1992); Morck and Nakamura (1994), Kaplan and Minton (1994), Bhagat and Black Weisbach, (2002)). Besides, the independent bored can easily fire up the weak CEO base on his/her performance. (Borokhovich, Parrino and Trapani (1996), Huson, (2001)). Most independent board members help when company performance deteriorates, seek a strong candidate for CEO seat from outside the company and do not support unduly (Borokhovich, Parrino, R., and Trapani (1996), Huson, M. (2001), Ajinkya, et. al, 1999; Baumol, 1995)

3.2 Independence of Corporate Governance Committees

According to Chapter Six of the Central Bank's Circular on the existence of important supervisory committees of the board of directors, similarly specialized committees should be established, and the number of its members should be consistent with the bank's organizational structure, number of board members, and the number of the bank's business lines. In this respect, independency is an important factor for effective oversight of committee members (Klein (1998)), John and Senbet (1998), Be’Dard et. al., 2004) have reported empirical evidence that the presence of control and monitoring committees such as (audit committee, compensation and salary committee) has a positive effect on the supervision. However, the presence of internal

[1] Committee of Sponsoring Organizations of the Tread way Commission

members in the compensation committees increases the probability of a bias decision in favor of the CEO (Newman, and Mozes (1999)). Also, when the CEO is on the incentive committee, or there is no incentive committee at all, the firm appoints fewer independent directors and appoints more managers with lack of transparency inside the organization and conflicts of interest (Shivdasani, A., and Yermack (1999)). Klein (2002) found that the Independent Audit Committee probably reduced the revenue of managements and thus increased transparency. Finally, when the CEO is on the incentive committee, it is less likely that the majority of the audit committee will be independent. (Klein, (2002)).

3.3 Number of Board Members

Same as the independence of the Board of Directors, this section also complies with Chapter Six of the Central Bank Directive, which is very important to consider, so the number of board members has a significant impact on the quality of corporate governance. Some studies support the idea that the high numbers of board members are ineffective. Hermalin and Weisbach (2003) believe that the size of the board is an indicator of the board activity and explain why the small size of the board is better than a large number of members and avoids free riding and oversight problems. For example, Yermack (1996) and Eisenberg et al. (1998) found a negative relationship between the number of board members and firm value, which is indicating that the smaller board is more efficient because they have fewer problems in coordination and communication.

3.4 Separate the Role of Chairman / CEO

As discussed in Chapter six of the Central Bank's ordinance, there are conflicts of interest between the Board of Directors and the CEO of the bank. The Board of Directors of a bank should develop and implement the necessary policies and strategies to minimize the conflict of interest, In this regard, the answer of this question of whether the role of the CEO and the CEO should be separate or not is critical and may include different answers.

One of the most important problems in our banking network is the lack of internal prudential guidelines to monitor and control trade/lend with/to stockholders and subsidiaries. In this regard, disclosure of the information is critical to reducing this conflict of interest. Then the advantages and disadvantages of separating the position of chairman and CEO have been extensively investigated. Jensen's study (1993) point out the separation of the role of chairman and CEO has significant benefits to shareholders. Similarly, the large firms that separated these two roles have higher book value coefficients than the firms that did not split them. (Yarmak (1996)) and also have a higher ROA ratio and cost-efficiency ratio. (Pi, L., and Timme (1993)). Another dimension in three lines of defense in the standard corporate governance is to reduce the risk of an internal coalition between chief managers by using independent auditors and outside specialists of the bank. The use of independent auditors is one of the most critical areas for improving corporate governance in banks and financial institutions. The primary purpose of auditing is to enable the auditor to comment on whether the bank's financial statement reflects the financial position and bank performance in a specific period. An independent auditor report usually addressed to shareholders, but many other counterparties, such as supervisors, financial officers, depositors, and investors, use it. The traditional approach to independent auditing, following the international auditing standards requirements, generally involves reviewing internal control systems. This evaluation is made to determine the limitation of the actual test, which provides an analytical summary or trend analysis. In addition to an auditing income statement, some of on the balance sheet items are also audited separately, for example, properties, money, and investment. Independent auditors have traditionally been looking for fraud, cheating, and mismanagement of the lending function. Auditing has generally lacked detailed capital value analysis of debtors, as traditionally supervisors have this function. The risk-based approach to financial regulation also requires a reassessment of the independent auditing. Independent auditors play a specific role as an essential component of risk management cooperation. If market discipline is used to promote the stability of the banking system, first of all, we must provide information and capacity for managers to respond to the bank's performance and bank healthy check.

Independent auditors play a key role to improve the market's ability to determine banks business plan. We expect independent auditors do:

- Assessing the inherent risks of the audited banks
- Analyzing and evolution the information provided to them to ensure the information is rational.
- Understand the essence of transactions and structures financial engineering used by the client bank.
- Reviewing management compliance with board procedures and policies.
- Reviewing information provided to the board of directors, shareholders, and regulators.
- Review legal requirements compliance.

- Report to the Board of Directors, shareholders, and regulators by providing them with reliable information.

The philosophy and approach to independent auditing are critical to the failure or success of a risk management strategy. Of course, the duties of the independent auditor is to protect the consumer. It is therefore important that the profession transforms from a balance sheet audit to an assessment of the inherent risks in the financial services industry. When all auditors of financial institutions adopt this approach is, the risk management process will significantly improve, and all stockholders' of banks will benefit. The role of the accounting and auditing profession has become important as part of the bank's oversight process. In many countries, especially that lack of regulatory oversight, supervisors can avoid duplication of work done by independent auditors for client banks. In these circumstances, the law provides for a broader license for auditors, but it is important to establish at least a proper cooperation mechanism.

4 Corporate Governance Quantification in Banks

The most important issue in measuring corporate governance is defining measurable criteria for evaluation. In this section, based on the theoretical and empirical literature, we first introduce general criteria and indicators in this scope; finally, we quantify these criteria for assessing corporate governance. The point to note in this section is that according to the introduced criteria for the existence of strong corporate governance in banks, we extract the indicators from the existing survey in this area. These indexes are extracted for most banks in the Iranian banking network. The banks are included: Eghtesad Novin Bank, Ansar, Tourism Bank, Middle East, Tejarat, Saderat, Mellat, Refah, Sepah, Meli, Post Bank, Qarzolhasaneh, Resalat, Sanat VA Madan, Keshavarzi, Maskan, Tose Saderat, and Tosee Taavon. We obtain information for quantitative indicators of corporate governance from banks' financial statements or through their official websites. In cases where there is no information on the indicators for the banks, we have an interview with the relevant departments and their internal control, audit committee, and ask about the status of the index.

Board Meeting: bored members need to increase the number of meetings to have a better monitor and control. In this case, the performance evidence of the board must be considered at the expense and benefits of the meetings. (Cotter, et al. 1997).For example, if the number of meetings is increased, financial and organizational performance improvement of the bank should be evident. (Vafeas)

Financial Information about Audit Committee: the duties of Audit committee members is internal control and financial reporting. Therefore, they must have the adequate financial information and sufficient knowledge about banking, finance, branches, and bank organization. (Bedard and et al.)

Auditors' Reputation: Auditor selection, including Big four international auditing institutions, contributes to greater transparency. For example, Michaely and Shaw (1995) showed that known auditors are less risk and perform better in the long run.

Audit Committee Meetings: The audit committee needs to increase the number of meetings to control better its performance, especially banks that want to avoid punishing supervisors. (McMullen and Raghunandan). In this paper, we examine some of the strong corporate governance characteristics similar to Larcker and et al. (2004), given the restriction of data availability for some banks in our banking network.

5 Select Corporate Governance Indicators and Set a Benchmark

This section defines the qualitative criteria of corporate governance. For this purpose, similar to Gillan and et al. (2003), we focus on four elements. Members of the Board of Directors, Compensation Committee, Appointment Committee, and Audit Committee. Besides, we use Banks' financial statements published annually by the Iran Banking Institute for the period 2011-95 to construct bank-specific variables. These variables are classified into precautionary ratios groups such as leverage, non-performing loan ratios, the asset size of bank and profitability status. Remember that implementing a good corporate governance mechanism creates a plan for rational goals of profitability and avoids high volatility in risk-taking and profitability.

Therefore, it would be reasonable to trace the effect of good corporate governance structures on two important precautionary ratios, such as leverage and non-performing loan ratios. We collect data to build corporate governance indicators based on the information published on the website of banks and interview with some of their expertise. We utilize the percentile ranking method to combine the sub-criteria and construct the four indicators mentioned above. As stated in the previous section, To build the benchmark of the board of directors, corporate governance will be improved if the board included a smaller number of members, the greater the number of meetings and the board of directors separated from the executive. Two criteria are combined to build the Board of Director's committee: the Compensation

Committee and the Assignment Committee criteria. The greater the number of meetings, the better the quality of corporate governance.

Also, as these committees are independent of the operational managers, they can help improve the quality of the bank's performance. We combine Audit criteria with setting up internal control and audit system. It is assumed that the corporate governance structure is appropriate if the number of meetings of the Audit and Internal Control Committee is high. Corporate governance has better quality if the number of auditors is higher, and financial information knowledge is more. Therefore, the Internal Audit and Control Committee criteria consist of four criteria: audit committee existence, number of meetings, members with financial expertise, committee size, and number of auditors greater than four. To construct the overall corporate governance index, the average rating of these three corporate governance criteria, i.e., the board criterion, is the Board of Directors committee criteria and the Audit criteria are considered.

Table (2) presents the financial variables and indicators of effective corporate governance, which used. The model estimated in this section is a pooled regression model; it can be transformed into a simple regression model in the form of Equation (1). In this equation, the variable $y_{ik,t}$ is the amount of bank financial ratios presented in this Table. Likewise, variables $x_{ik,t}$ are the values of corporate governance indicators in the banks, the index *(k, I, t)* of these variables for bank *i* at time *t* and group *K* is shown in the following table. In the table (2), the variable *Y* represents the dependent variables in the estimated models, and we represent the set of independent variables by the X variables.

$$y_{it} = \alpha+\beta_1 x_{1it} + \ldots + \beta_k x_{kit}+u_{it} \qquad (1)$$

To calculate the effect of corporate governance variables on financial statements of banks variables, we first used *the F* test for the panel data model. The independent variables are Corporate Governance Index, Board Index, Compensation and assignment Committee Index, Control, and Audit Index. We estimate four models for this purpose. We use the Hausman and Limmer statistics to select the estimation method. The results of the tests indicate that the model should be estimated by the pooled data method.

Table 2

Financial statement ratios and corporate governance indicators

	Vars' name	definition	Criteria	
Banking(dependent variables)	Y	Equity to asset ratio	Capital adequacy ratio (precautionary ratios)	**Financial statements vars**
	Y	NPL ratio	precautionary ratio	
	Y	Log of asset size	Bank size	
	Y	Profit growth	growth	
	Y	Development cost to the total asset (training cost)	Intangible asset	
Corporate governance (independent variables)	X_{21}	Number of board members	Size of board	**Board of director indicator**
	X_{22}	Number of meeting	Bored meeting	
	X_{23}	Variables give one if there are no operational members in the board	A dummy variable (separation board members from operational managers)	
	X_{31}	Take one if committee exist	Compensation committee Existence	**Compensation and assignment committee**
	X_{32}	Number of meeting	Compensation committee meeting	
	X_{33}	Number of meeting	Assignment committee meeting	
	X_{34}	Take one if committee exist	Assignment committee Existence	
	X_{41}	Take one if committee exist	audit committee Existence	**Control and auditing criteria**
	X_{42}	Number of auditors	Number of audit committee members	
	X_{43}	Take one if Number of auditors is more than four	Number of auditors if more than four committee members	
	X_{44}	Take one if at least an auditor is a specialist in finance	Financial knowledge of members	

Source: Research Findings.

Table 3
Statistic Test

variables	NPL Ratio	Profit Growth rate	Log of asset	Development cost to the total asset (training cost)	Equity to asset
Hausman stat*	2.68 (0.69)	3.09 (0.54)	0.14 (0.99)	1.77 (0.77)	1.51 (0.82)
Limmer stat	1.08 (0.61)	1.29 (0.17)	0.64 (0.90)	0.95 (0.53)	0.59 (0.94)

*Numbers in parentheses are probability values. Source: Research Findings.

We show the results of the regression estimation in Table (4). The numbers in parentheses represent t-statistics. As we see, the overall corporate governance index has a significant effect on the prudential ratios of banks that fundamentally track and implement good governance structures; improving the quality of corporate governance in a bank by affecting the risk-taking and ultimately the bank's profits reduces its equity ratio.

In other words, the channel of corporate governance effects are via precautionary ratios and reducing the bank's profitability and ultimately, equity level. In the case of another precautionary ratio, that is, the effect of corporate governance structures on the value of NPL, the results are very important. Good corporate governance significantly reduces the amount of NPL in the banking network. Significance of this variable is also important for other indicators of corporate governance such as board index and internal control and auditing. The results are consistent with the other empirical studies and indicate that the criterion of corporate governance currently is not sufficient to promote profitability in the banking network. The relationship between the logarithmic of total asset size and corporate governance structure is positive and significant. Operationalizing good corporate governance can have a positive effect on the size of the bank and increase the optimal size of the bank. The effect of corporate governance mechanisms on the growth of profitability is not significant.

Table 4
Results of regression estimation

	Variable type	Independent variables			
		Control and auditing criterion*	Compensation and assignment indicator*	Board of directors indicator*	Corporate governance indicator*
Dependent variables	Equity to total asset*	0.88 (2.32)	-0.21 (-1.98)	-4.26 (-1.02)	-0.38 (-1.79)
	NPL	-1.98 (-3.18)	-0.6 (-2.12)	-1.65 (-1.7)	-0.74 (-1.98)
	Development cost to total asset (training cost)	0.28 (0.68)	-0.5 (-1.16)	-0.94 (-2.07)	-0.31 (-0.37)
	Log of asset	0.84 (4.23)	0.85 (8.02)	0.19 (5.42)	0.95 (6.21)
	Profit Growth rate	1.58 (0.64)	1.85 (1.32)	-3.9 (-3.11)	3.12 (1.27)
	Adjusted R2	0.43	0.58	0.48	0.53

*The numbers in parentheses are t statistics. Source: Researchers estimation.

6 Conclusions and Policy recommendations

The critical CBI's ordinance issued on the requirements of corporate governance in private banks in 2016 is enforcing banks to initiate changes in their structures and internal controls. Banks must build a structure for upgrading operational corporate governance in the whole organization, including branches and other departments. This guideline by addressing to some of the important issues such as risk management structure, internal controls, and compensation systems as well as Sharia compliance to other guidelines published Tehran Stock Exchange is more optimized and operational for banking network.

In this regard, in this paper, considering the importance of corporate governance requirements in the Iranian banking network, we try quantifying some indicators for corporate governance framework in Iranian banking network; and we illustrate a comprehensive model for quantifying the effect of financial statements ratios on corporate governance indicators of banks. The results of the pool regression model for thirty banks, including national and private banks, show that good corporate governance in addition to cover implicitly systemic risk it improves the financial health of each bank individually.

We attempt to demonstrate the effect of good corporate governance by aggregating corporate governance criteria such as the existence of audit committee and other committees, for example, the compensation and assignment Committee. The results show that the effect of corporate governance mechanisms on prudential ratios, such as leverage ratios and NPL ratios is significant and important. In other words, having a strong corporate governance structure and upgrading it in the given period has reduced the amount of non-performing loans in the banking networks. The coefficient of the corporate governance index and its effect on the size of bank assets and the ratio of non-performing loan respectively are higher than the other variables.

Another important point of the results is that although the calculated indexes of corporate governance do not have a significant impact on the profitability of banks, these mechanisms, i.e. good corporate governance is important for prudential ratios. These results confirm that stakeholders in the banking network should assess their expectations of internal auditors based on dependent auditor performance. Besides, stakeholders ensure that the follow-up identified points and opinion by independent auditors in their report to make positive changes in equity. Perhaps the most important policy tool to implement good corporate governance is to design an effective framework and a better methodology such as the COSO framework, which can increase qualification of the internal audit process. However, the banks can satisfy some supervisory requirements by implementing new international standards in this area.

References

Bank for International Settlements (2010). *Principles for enhancing corporate governance*. Basel Committee on Banking Supervision. Basel

Barontini, R., & Siciliano, G. (2003). *Equity Prices and the Risk of Expropriation: An Analysis of the Italian Stock Market*, Working Paper No. 24, European Corporate Governance Institute Finance, Brussels.

Bauer, R., Guenster, N., & Otten, R. (2004). Empirical Evidence on Corporate Governance in Europe: The Effect on Stock Returns, Firm Value, and Performance. *Journal of AssetManagement*, Vol. 5, No. 2, 91-104.

Baysinger, B. D., & Butler, H. N. (1985). Corporate Governance and the Board of Directors: Performance Effects of Changes in Board Composition. *Journal of Law Economics and Organisation*, Vol. 1, No. 1, pp. 101-24.

Bebchuk, L., Cohen, A., & Ferrell, A. (2004). *What Matters in Corporate Governance*, Working Paper No. 491, Harvard Law School, Cambridge, MA.

Bhagat, S., & Black, B. (2002). The Non-Correlation between Board Independence and Long-Term Firm Performance. *Journal of Corporation Law*, Vol. 27, 231-73.

Black, B., Jang, H., & Kim, W. (2006). Does Corporate Governance Affect Firm Value? Evidence from Korea. *Journal of Law, Economics and Organization*, Vol. 22 No. 2, 366-413.

Borokhovich, K. A., Parrino, R., & Trapani, T. (1996). Outside Directors and CEO Selection. *Journal of Quantitative Analysis*, Vol. 31, No. 3, 337-55.

Brown, D. L., & Caylor, M. L. (2006). Corporate Governance and Firm Valuation. *Journal of Accounting & Public Policy*, Vol. 25 No. 4, 409-34.

Byrd, J., & Hickman, K. (1992). Do Outside Directors Monitor Managers? Evidence from Tender Offer Bids. *Journal of Financial Economics*, Vol. 32, No. 1, 195-207.

Campos, C. E., Newell, R. E., & Wilson, G. (2002). Corporate Governance Develops in Emerging Markets. *McKinsey on Finance*, No. 3, 15-18.

Chava, S., Dierker, M., & Livdan, D. (2004). *Do Shareholder Rights Affect the Cost of Bank Loans*? Working Paper, University of Houston, Houston, TX.

Chi, J. D., & Lee, O. S. (2005). *The Conditional Nature of the Value of Corporate Governance*. Working Paper, Texas A&M University, College Station, TX.

Cotter, J. F., Shivdasani, A., & Zenner, M. (1997). Do independent directors enhance target shareholder wealth during tender offers?. *Journal of financial economics*, 43(2), 195-218.

Credit Lyonnais Securities Asia (2001). *Saints & Sinners: Who's Got Religion?* Credit Lyonnais Securities Asia, Hong Kong.

Cremers, K. J. M., & Nair, V. B. (2005). Governance Mechanisms and Equity Prices. *Journal of Finance*, Vol. 60, No. 6, 2859-94.

Daily, C. M., & Dalton, D. R. (2004). The Rating Game. *The Journal of Business Strategy*, Vol. 25, No. 1, 7-8.

Danielson, M., & Karpoff, J. (1998). On the Uses of Corporate Governance Provisions. *Journal of Corporate Finance*, Vol. 4, No. 4, 347-71.

Deminor (2003). Corporate Governance Rating and Investors Report, Deminor, Paris.

Durnev, A., & Kim, E. H. (2005). To Steal Or Not To Steal: Firm Characteristics, Legal Environment, and Valuation. *Journal of Finance*, Vol. 60, No. 3, 1461-93.

Eisenberg, T., Sundgren, S., & Wells, M. (1998). Larger Board Size and Decreasing Firm Value in Small Firms. *Journal of Financial Economics*, Vol. 48, No. 4, 35-54.

Fahlenbrach, R. (2003). *Shareholder Rights and CEO Compensation*, Research Paper No. 03-05, Institute for Law and Economics, University of Pennsylvania, Philadelphia, PA.

Fama, E. F., & Jensen, M. C. (1983). Separation of Ownership and Control. *Journal of Law & Economics*, Vol. 26, No. 2, 301-26.

Gillan, L. S., Hartzell, J. C., & Starks, L. T. (2003). *Explaining Corporate Governance: Boards, Bylaws and Charter Provisions*, Working Papers, No 2003-03, Weinberg Center for Corporate Governance, Newark, DE.

Gompers, P., Ishi, J. L., & Metrick, A. (2003). Corporate Governance and Equity Prices. *Quarterly Journal of Economics*, Vol. 118, No. 1, 107-55.

Huson, M. (2001). Internal Monitoring and CEO Turnover: A Long-Term Perspective. *Journal of Finance*, Vol. 56, No. 6, 2265-97.

John, K., & Senbet, L. W. (1998). Corporate governance and board effectiveness. *Journal of Banking & Finance*, 22(4), 371-403.

Kaplan, S. N., & Minton, B. A. (1994). Appointments of outsiders to Japanese boards: Determinants and implications for managers. *Journal of Financial Economics*, 36(2), 225-258.

Klein, A. (2002). Economic Determinants of Audit Committee Independence, *Accounting Review*, Vol. 77, No. 2, 435-52.

Klock, M. S., Mansi, S. A., & Maxwell, W. F. (2005). Does Corporate Governance Matter To Bondholders? *Journal of Financial and Quantitative Analysis*, Vol. 40, No. 4, 693-720.

Morck, R., Nakamura, M., & Shivdasani, A. (2000). Banks, ownership structure, and firm value in Japan. *The Journal of Business*, 73(4), 539-567.

Newman, H. A., & Mozes, H. A. (1999). Does the composition of the compensation committee influence CEO compensation practices?. *Financial management*, 41-53.

Patel, S., Balic, A., & Bwakira, L. (2002). Measuring Transparency and Disclosure at Firm-Level in Emerging Markets. *Emerging Markets Review*, Vol. 3, 325-37.

Rosenstein, S., & Wyatt, J. G. (1990). Outside directors, board independence, and shareholder wealth. *Journal of financial economics*, 26(2), 175-191.

Shivdasani, A., & Yermack, D. (1999). CEO Involvement in the Selection of New Board Members: An Empirical Analysis. *Journal of Finance*, Vol. 54. No. 5, 1829-54.

The Central Bank of Iran Circular “Guidelines for Corporate Governance in Private Financial and Credit Institutions” web address: www.cbi.ir.