

## Corporate Governance and Information Asymmetry

Muhammad Akmal<sup>1</sup>, Abdul Rashid<sup>2</sup> and Sajid Amin<sup>3</sup>

### Abstract

*The financial industry is regarded as the backbone of the economy, and good corporate governance is critical to its smooth operation. Keeping in view the importance of corporate governance, this study aims to empirically investigate the impact of corporate governance on information asymmetry with moderating role of institutional quality of Islamic and conventional financial institutions. We used unbalanced panel data from 2006 to 2017 of 49 financial institutions including commercial banks, insurance companies, and Modaraba companies. A two-step system-Generalize Method of Moments (GMM) estimator is used to mitigate the endogeneity problem. Corporate governance of Conventional Financial Institutions (CFIs) is significantly related to information asymmetry however, the board size, and board composition of Islamic Financial Institutions (IFIs) are insignificant with asymmetric information index (AII). Further, the size of the shari'ah board is negatively and significantly related to AII. Institutional Quality (IQ) is significantly contributed toward the reduction of information asymmetry and plays a role as a moderator. Further, the impact of corporate governance on IFIs and CFIs differs due to the nature and contractual relationship of the parties and the institution's type. The results of the study reveal that good quality institutions are important for corporate governance structure and the reduction of information asymmetry in financial institutions.*

**Keywords:** Information asymmetry, Corporate governance, Institutional quality, Financial institutions, Islamic finance.

**JEL Classification:** D82, G34, O17, G2

### 1. Introduction

Effective corporate governance (CG) is important for information symmetry. Information symmetry is a state where counterparties have an equal amount of information regarding assets or stock being traded. CG has to play an important role in information disclosure in respect of financial institutions (Haty, 2009). The preparation of the financial statements aims to report the financial

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<sup>1</sup> Manager Shariah Compliance, MCB Islamic Bank Limited, Lahore, Pakistan.

<sup>2</sup> Director General, International Institute of Islamic Economics, International Islamic University, Islamabad, Pakistan.

<sup>3</sup> PhD Scholar, Department of Economics, University of the Punjab, Lahore, Pakistan.

Corresponding Author's Email: [sajidamin2626@gmail.com](mailto:sajidamin2626@gmail.com)

details, financial statutes, and the results of the business operations (Jamalinesari and Soheili, 2015). It is difficult to deny the value of information in decision-making, less information can lead to greater uncertainty (Seresht et al., 2015). The proper functioning of capital markets is very important for the whole economy, CG has a role to attract and retain the confidence of investors. In a situation of information asymmetry, suitable corporate measures are needed to monitor the behavior of opportunistic management (Han et al., 2014). If CG is not working properly, conflict arises between big and small investors, principal-principal conflict (Jamalinesari and Soheili, 2015).

The confidence of the investors could be increased through efficient CG for the stability of cash flows in the future. This plays the role of a lever for the trust between investors and the company. Past financial crises underlined the significance of good governance. Further, for investors, the accuracy of the information disclosed depends on the board of directors. Previous studies suggested that this structure reduces information asymmetry (Sougne et al., 213).

Attig and Morck (2005) contend that weak and ineffective board increase the level of information asymmetry, which create trouble for shareholders. This would shake the confidence of investors. On the other hand, an effective board plays a role to lessen information asymmetry and increase the transparency of information. This is considered essential for the transparency of financial information (Kachouri and Jarboui, 2017; Tahir et al., 2019). Financial transparency and CG have been the object of many previous research since the 1960s. Recently, the focus of the researchers increased to explore the relationship between governance and information disclosure (Kachouri and Jarboui, 2017). Girard and Rakotonjanahary (2005) reported in their study that good governance improves information transparency for stakeholders and particularly for shareholders.

Most of the literature was found in developed countries, nonetheless, a limited number of studies were found in developing countries like Pakistan (Tahir et al., 2019; Nosheen and Sajjad, 2018). In South Asian countries where investors protection, legal enforcement, ownership structure, and political environment differ considerably from developed countries. Therefore, the relationship between CG and information asymmetry might differ from others. Gisbert and Navallas (2013) said in their study that in developing countries legal framework is inadequate, the flow of information is ineffective and ownership concentration is high. Thus, this study might provide some good insights into the relationship between CG and information asymmetry.

Existing literature focused on listed institutions to investigate the relationship of CG with information asymmetry however, not listed institutions are ignored largely. Few studies are, Wu et al. (2019) on US institutions, Joudi et al. (2019) on Iranian firms, and Tahir et al. (2019) on Pakistani listed firms, the relationship between CG and disclosure quality of listed Pakistani institutions investigated by Nosheen and Sajjad (2018), Musovaa (2017) on listed firms of Bratislava Stock Exchange. Arslan and Alqatan (2020) and Arslan et al. (2019) concluded that institutional determinants like legal, political, corruption, culture and values are very important to determine the practices of CG in developed and developing countries. Given literature mainly focuses on the non-financial sector, however, the financial sector found little focus. Pakistan is a growing economy and has been facing a liquidity crunch. The balance of payments is also disturbed. Voices are growing that country is heading toward default. Therefore, in a given scenario for a growing economy like Pakistan, symmetric information is very important for the growth of the financial sector and the economy as a whole.

In the context of Pakistan, to the best of our knowledge, we hardly find any study in which the relationship of CG with asymmetric information of the financial sector is explored. Therefore, this study will contribute to exploring the relationship of CG with asymmetric information. Further, we explored the role of institutional quality in shaping the effect of CG on information asymmetry.

This paper contributes to the existing body of knowledge differently. Firstly, this is the first study in Pakistan, to the best of our knowledge which compares IFIs and CFIs with respect to CG and information asymmetry. Secondly, this paper investigates to impact of IQ on the information asymmetry of IFIs and CFIs. Thirdly, this paper adds to the growing literature by investigating the role of IQ as a moderator between CG and information asymmetry. Finally, it builds upon the existing literature on the differential impact of CG on information asymmetry of both types of institutions i.e., Islamic, and conventional.

This study is beneficial for academia in ways that it opens new avenues for research in this field. Further, it helps the industry to make structural changes formation structure of the board of directors their qualifications, and expertise. Overall, CG is not playing an effective role to restrict asymmetric information for both IFIs and CFIs. For regulators, improvements can be done to the Code of Corporate Governance by the Security and Exchange Commission of Pakistan and the Corporate Governance Regulatory Framework by the State Bank of Pakistan accordingly.

The structure of the paper is as follows. After the introduction, objectives and research gaps are presented in the paper in the first section. In section 2, the relevant literature of the study is briefly reviewed and discussed. Hypotheses of the study are also built in this section. Data, sample, and model specifications are given in section 3. Section 4 describes the finding and section 5 discusses the key finding, conclusion, and implications.

## **2. Literature Review**

Foremost, the purpose of preparing a financial statement is to provide useful financial information to those who need such information i.e. investors, creditors, and regulators. Therefore, nowadays no one can deny the importance of financial information for decision-making. High quality and transparent information are in demand by investors and creditors. Shareholder interest could be protected through transparent information, which has a positive relationship with the performance of the company. Obscure information does not portray the true picture of the entity and can deceive investors. Thus, transparency is very important for investors (Jamalinesari and Soheili, 2015). Information asymmetry is identified as one of the main problems/challenges for emerging economies (Ciner and Karagozoglu, 2005; Oluba; 2008)

Information asymmetry is not good for shareholders' wealth when it appears between management and shareholders (McLaughlin et al., 1998). The agency theory postulates that management maximizes their benefits at minority shareholders' cost (Jensen and Meckling, 1976). Disclosure of information can be delayed by the management, to take the benefit of unpublished information, before it is reflected in stock price (Han et al., 2014). Agency theory depicts that corporate mechanism plays a positive role in the reduction of information asymmetry (Chung and Shen, 2009).

To cater to the said problem and the protection of interest of investors, the maximum possible information should be released on time (Tahir et al., 2019). In the context of the agency problem, CG, designed to prevent the self-interest of management can increase the shareholders' wealth and information disclosure environment. Many researchers suggested that good CG can protect the interest of investors, whereas investors select those institutions which have strong CG policies (Gompers et al., 2003; Choi et al., 2007).

The relationship between CG and information asymmetry has been studied in the past (Ferreira and Laux, 2007; Jamalinesari and Soheili, 2015; Wu et al., 2019). Wu et al., (2019) determine a negative relationship between independent

directors and information asymmetry in USA firms. Musovaa et al., (2017) concluded that CG has a positive impact on reducing information asymmetry. Mali and Anis (2017) found that CG has a positive impact on information transparency in Tunisian institutions. Furthermore, some studies concluded that investors and stock markets give importance to the role of CG in information symmetry, which resulted in to increase in the wealth of shareholders (Welker, 1995).

### **Board Size and Information Asymmetry**

Some researchers concluded that large corporate boards lack candid discussion on important issues which leads to poor performance (Jensen, 1993). Thus, large board sizes might play a role in hindering the transparency of information flow. There is one point of view that the increase in board size increases the managing cost and is less effective for the institution's performance and may decrease the information flow. This view is postulated by agency theorists (Sougne et al., 2013). However, on the other side resource dependency theory suggested that an expanded council might increase the relationship between an institution and other stakeholders, and performance will increase. Some researchers also suggest that a large board size will increase the monitoring and information flow and decreases the information asymmetry (Agrawal and Knoeber, 1999; Anderson et al., 2004). Samaha et al., (2015) and Nosheen and Sajjad (2018) concluded that board size has a positive relationship with voluntary disclosure. As a result, management transparency increases and is open to disclosing information (Gandia, 2008; Leng and Ding, 2011; Agyei-Mensah, 2017).

H<sub>1</sub>: There is a positive relationship between board size and information asymmetry

### **Board Composition and Information Asymmetry**

Board composition i.e., non-executive board members show the independence of the board. As the number of outside directors increases on board the independence will increase (Cheng and Courtenay, 2006). Independent directors play a role in the alignment of the goals of owners and managers. Independent directors increase transparency and fairness in the transaction and information flow. However, past empirical studies showed mixed results (Ntow-Gyamfi et al., 2015). Some researchers conclude that non-executive directors do not have any interest to be in good books of management, therefore, raise their voices on issues (Wan-Hussin, 2009; Clarke, 2006). Thereby, the proportion of non-executive directors on the board will increase transparency and smoothen the information flow.

Voluntary disclosure increases with the proportion of independent directors (Navarro and Urquiza, 2015). Independent directors effectively control managerial decisions and reduce information asymmetry (Sougne et al., 2013). Elbadry (2010) concludes in his study that independent directors have a negative relationship with information asymmetry. Sun et al., (2012), Agyei-Mensah (2017), and Wu (2019) produced the same results in their studies.

H<sub>2</sub>: Board Independence has a negative relationship with information asymmetry.

### **CEO Duality and Information Asymmetry**

CEO duality or role duality increases the concentration of power, literature acknowledged the fact that this hinders the independence and governance roles of the board. It also hampers the transparency and disclosure policies i.e. information asymmetry (Ntow-Gyamfi et al., 2015). The Agency theory of CG is used to strengthen said claim (Gul and Leung, 2004; Fama and Jensen, 1983).

Another viewpoint, based on the stewardship theory, contends that having a dual role allows CEOs to have good leadership and be in a stronger position to make better decisions in the best interests of shareholders and institutions (Gul and Leung, 2004). Some empirical studies recorded that role duality increases the opaqueness of the management and leads toward less limpidity (Chau and Gray, 2010; Gul and Leung, 2004).

H<sub>3</sub>: CEO duality has a positive impact on information asymmetry

### **CEO Remuneration and Information Asymmetry**

Performance-related incentives are intended to increase the wealth of shareholders by encouraging the shareholders to expand their efforts toward this cause. It is suggested by researchers to extend regular compensation with equity base incentives to encourage the managers for wealth maximization of shareholders (Camara, 2001). Some other researchers suggest that long-term incentives like equity-based are better for the alignment of interests of CEO/managers and investors (Shleifer and Vishny, 1997; Kang et al., 2006). Rewards for managers for their better performance also reduce information asymmetry, because they revealed their efforts to investors for the qualification of performance-based rewards.

As per agency theory, to cater the issue of information asymmetry between shareholders and managers, shareholders assign performance-based compensation contracts to reduce adverse selection and moral hazard agency costs (Zhang, 2011). If bonuses and rewards are performance-based and the higher the amount of

compensation to the CEO, the lower level of asymmetric information. A combination of long-term incentives with bonuses scheme and executive benefits will boost performance and reduce information asymmetry (Elbadry and Skinner, 2010). Elbadry (2010) found a negative relationship between CEO remuneration and information asymmetry in UK institutions.

H<sub>4</sub>: CEO remuneration is negatively related to information asymmetry.

### **Ownership Concentration and Information Asymmetry**

Institutional investors have a fiduciary responsibility to the owners, thus they try to protect every investment made on behalf of owners. Since institutional owners have big stock in a company, thereby, play close monitoring which results to eradicate information asymmetry and enhanced transparency (Ntow-Gyamfi et al., 2015). It is also argued that block holders increase the quality of CG and play a role to minimize the agency problem (Thadden, 2003; Renneboog, 2005).

In emerging economies, members of the founding families and related entities of the institution hold power themselves by keeping the largest amount of shares and voting rights (Byun et al., 2011). This form of situation creates a conflict of interest between majority and minority shareholders, which is not found in diffused ownership. This type of equity structure in business conglomerates may encourage the management to divert resources at the cost of smaller shareholders (Bae et al., 2002). The majority of shareholders have opportunities to use the information for expropriation by taking private information (Byun et al., 2011). Therefore, there is a positive relationship between concentrated ownership and asymmetric information. Elbadry et al., (2015) and Lin et al., (2017) produced the same results.

H<sub>5</sub>: There is a positive relationship between ownership concentration and information asymmetry

### **Shari'ah Supervisory Board and Information Asymmetry**

The primary goal of the Shari'ah Supervisory Board (SSB) in Islamic financial institutions is to ensure that the goods and services provided are compliant with Islamic law. There are two forms of agency problems in Islamic financial institutions: one is a conflict of interest over shareholder wealth maximization. Second, is to make sure the operations of the institution and investment comply with Islamic law. *Shari'ah* scholars on SSB strengthen the credibility of institutions, which in turn results in less withdrawal and liquidity risk (Safiullah, and Shamsuddin, 2018).

SSB also increases the transparency in an organization which increases the confidence of investors and reduces information asymmetry. SSB is an extra layer to monitor the operations of Islamic financial institutions, therefore, increasing transparency (AlAbbad and Saba, 2019). SSB can communicate with the shareholders if managers deviate from transparency. Members of SSB are ethically and morally driven rather than greedy, therefore, they report to shareholders truthfully (Rammal, 2006; Farook and Farooq, 2011). Hence, the *Shari'ah* board decreases the level of information asymmetry.

H<sub>6</sub>: There is a negative relationship between the size of SSB and information asymmetry

### **3. Data Description and Research Methodology**

Data are extracted from the annual financial statements of the respective institutions of each sector over the period of 2006-2017. Unbalanced panel data of commercial banks, insurance companies, *Takaful* operators, and *Modarbas* companies. The Independent variable is CG and the dependent variable is information asymmetry. Likewise, institution-specific and macroeconomic variables are also included. Additionally, institutional quality is used as a moderator.

We use a two-step system Generalize Method of Moments (GMM) estimator. There are certain advantages to using a two-step system GMM estimator. It mitigates cross-sectional correlation and endogeneity problems and allows researchers to use first-difference instruments. Second-order serial correlation is tested through Arellano and Bond (1991). We used unbalanced panel data where cross sections are more than the time span therefore, GMM is suitable for this type of data. Further, indexes are constructed by using Principal Component Analysis. It has certain advantages; it aggregates the information in a unique single index. Further, it controls the problem of multicollinearity. Additionally, it produced the weights of each variable automatically (Tarchouna, 2017) and an index is created by using a command in Stata.

#### **Variable Construction**

Previous studies used various variables as a proxy of CG to meet the objective of their studies. We include those CG variables that are most relevant and available. These variables are board size, board composition, CEO duality, CEO remuneration, and ownership concentration (Aslam and Haron, 2020; Nawaz, 2019; Sheikh and Kareem, 2015). Additionally, the size of SSB is also used as a governance variable. We used institution specific which includes leverage and



growth opportunities and macro-economic variables which are GDP, CPI, and KIBOR. A detail of these variables is given in the appendix. Similarly, the data for institutional quality indicators which include the Rule of Law, Control of Corruption, and Regulatory Quality are taken from the Worldwide Governance Indicators by World Bank.

### **Construction of Asymmetric Information Index**

Researchers suggested different measures for information asymmetry. Some of them used institution size as a proxy of information asymmetry i.e., as the institution size increases, the level of information asymmetry decreases (Vermaelen, 1981). Expenditure on research and development has a positive relation with information asymmetry (Aboody and Lev, 2000). Growth opportunity has also a positive relationship with information asymmetry (Smith and Watts, 1992). Many past studies, however, use one or two variables to measure information asymmetry (Cai, Liu, Qian, and Yu, 2015). However, in this study, we construct an information asymmetry index (AI Index) as a comprehensive measure.

#### ***Institution Size***

Institution size has a negative association with information asymmetry. Larger institutions are more mature and have time-tested and established disclosure policies. Big-volume institutions share more information than smaller ones. Larger institutions are more focused on regulators and the market (Diamond and Verrecchia, 1991; Harris and Raviv, 2008). Institution size is measured by the log of assets and market value of equity (Cai, Liu, Qian, and Yu, 2015).

#### ***Institution Age***

There is a relationship between institution age and information asymmetry. Old institutions are more mature and have established policies and procedures for information disclosures. Therefore, where the policies and procedures are well established, it is assumed that it will reduce information asymmetry. It is expected that old institutions are more open to information as compared to new ones, and investors are more familiar with old institutions. Thus, institution age is another proxy, which is used for information asymmetry (Helwege and Liang, 1996).

#### ***Number of Shareholders***

Some researchers argued that the stock market is a source of information (Allen, 1993). As the number of shareholders increase, the volume of information increases as well, which in results reduce the information asymmetry (Jung, King and Stulz, 1996; Klein and Belt, 1994; Cai, Liu, Qian, and Yu, 2015). Because

shareholders have information about the institution, some obtain information at cost and some others at free.

### ***Intangible Assets***

Information asymmetry has a positive relationship with the size of intangible assets. If the size of intangible assets like brand names and technology is high, then the problem of information asymmetry increases. Because there is uncertainty and therefore difficult to measure the value of intangible assets. If data are not available, then it is considered zero.

### **Tobin's Q**

Institutions that have more investment opportunities face severe issues of information asymmetry (Smith and Watts, 1992). Therefore, different proxies, which are available to measure growth and investment opportunities are used for information asymmetry (McLaughlin et al., 1998). Tobin, Q is one of the proxies to measure the growth opportunities of the institution.

The below model is given to estimate the effect of CG on information asymmetry.

$$AII_{i,t} = \beta_0 + \beta_1 AII_{i,t-1} D^{IFI} + \beta_2 AII_{i,t-1} D^{CFI} + \beta_3 CGC_{i,t} D^{IFI} + \beta_4 CGC_{i,t} D^{CFI} + X_{i,t} \lambda + e_{i,t} \quad (1)$$

Where  $AII_{i,t}$  is a measure of information asymmetry index constructed on  $INSZ_{it}$ ,  $INAG_{it}$ ,  $NSH_{it}$ ,  $TQ_{it}$  and  $INTAS_{it}$ , where  $INSZ$  is calculated as the size of the asset of an institution,  $INAG$  is the age of the institution,  $NSH$  denotes the number of shareholders,  $TQ$  is Tobin q and  $INTAS$  represents the size of intangible assets.  $CGC_{i,t}$  is the proxy of CG. ( $D^{IFI}$ ) and ( $D^{CFI}$ ) are used as dummy variables for Islamic and conventional financial institutions.  $X_{i,t}$  is a set of additional explanatory institution-specific and macroeconomic variables that includes  $LEV_{it}$ ,  $GO_{it}$ ,  $LGDP_t$ ,  $LCPI_t$  and  $KIBOR_t$ .  $LEV$  represents leverage,  $GO$  stands for growth opportunities,  $LGDP$  log of gross domestic product,  $LCPI$  is the log of consumer price index and  $KIBOR$  represents Karachi interbank offer rate.  $e_{i,t}$  is the composed error term.  $\lambda$  is a vector of coefficients and  $\beta_1$  is intercept.

$$AII_{i,t} = \beta_0 + \beta_1 AII_{i,t-1} D^{IFI} + \beta_2 AII_{i,t-1} D^{CFI} + \beta_3 CGI_{i,t} D^{IFI} + \beta_4 CGI_{i,t} D^{CFI} + \beta_5 CGI_{i,t} D^{IFI} \times IQ_{i,t} + \beta_6 CGI_{i,t} D^{CFI} \times IQ_{i,t} + \beta_7 IQ_{i,t} + X_{i,t} \lambda + e_{i,t} \quad (2)$$

Where,  $CGI_{i,t}$  denotes CG Index,  $IQ_t$  is for Institutional quality index CG and institutional indexes are developed through Principal Component Analysis (PCA), according to existing literature (Tarchouna et al., 2017).

#### 4. Results and Discussion

In this section, we discussed the results and discussion on the relationship between CG and information asymmetry. The results of the validity tests given in Table 1 depict that the model is fitted well. The results of the second-order autocorrelation of AR (2) and the Sargan test (Pathan and Faff, 2013) for over-identifying restrictions are insignificant statistically. The residuals in AR (1) of the

**Table 1: CG and Information Asymmetry**

Variables	AII	Variables	AII
<b>BSIZ</b> × <b>D<sup>IFI</sup></b>	-0.153 (0.0955)	<b>CGI<sup>IFI</sup></b>	0.134*** (0.0297)
<b>BSIZ</b> × <b>D<sup>CFI</sup></b>	-0.889*** (0.128)	<b>CGI<sup>CFI</sup></b>	0.0195* (0.0115)
<b>BCOM</b> × <b>D<sup>IFI</sup></b>	0.00494 (0.0471)	<b>CGI<sup>IFI</sup>_IQ</b>	0.0151*** (0.00433)
<b>BCOM</b> × <b>D<sup>CFI</sup></b>	-0.202*** (0.0411)	<b>CGI<sup>CFI</sup>_IQ</b>	-0.0319*** (0.00668)
<b>CEOD</b> × <b>D<sup>IFI</sup></b>	0.0932*** (0.0360)	<b>IQ</b>	-0.0101* (0.00514)
<b>CEOD</b> × <b>D<sup>CFI</sup></b>	-0.174** (0.0752)	<b>LEV</b>	-0.0751*** (0.00342)
<b>CEOR</b> × <b>D<sup>IFI</sup></b>	0.00260* (0.00156)	<b>GRTOPR</b>	2.170** (0.864)
<b>CEOR</b> × <b>D<sup>CFI</sup></b>	-0.00693 (0.00800)	<b>LOG-GDP</b>	-0.0992** (0.0408)
<b>OWNC</b> × <b>D<sup>IFI</sup></b>	0.0224*** (0.000622)	<b>LOG-CPI</b>	0.120** (0.0552)
<b>OWNC</b> × <b>D<sup>CFI</sup></b>	0.0189*** (0.000578)	<b>KIBOR</b>	-0.00484*** (0.00105)
<b>SBS<sup>IFI</sup></b>	-0.0524*** (0.0142)	<b>LAG-AII</b>	6.606*** (0.0280)
<b>LEVERAGE</b>	-0.0515*** (0.0119)	<b>Constant</b>	1.297** (0.588)
<b>GRTOPR</b>	0.0113 (0.0100)		
<b>LOG-GDP</b>	0.232 (0.150)		
<b>LOG-CPI</b>	-0.182*** (0.0614)		
<b>KIBOR</b>	-0.00215 (0.0312)		
<b>LAG- AII</b>	0.424*** (0.0312)		
<b>Constant</b>	-3.650* (2.131)		
<b># of Observations</b>	487	<b># of Observations</b>	487
<b># of Institutions</b>	49	<b># of Institutions</b>	49
<b># of Instruments</b>	47	<b># of Instruments</b>	47
	<b>Validity Test</b>		<b>Validity Test</b>
<b>AR1</b>	-2.140 (0.032)	<b>AR(1)</b>	-2.097 (0.035)
<b>AR2</b>	0.982 (0.325)	<b>AR (2)</b>	1.730 (0.083)
<b>Sargan Test</b>	28.736 (0.954)	<b>Sargan Test</b>	25.694 (0.943)

first difference should be serially correlated, however, these should not be serially correlated in the second difference i.e., AR (2). Therefore, the results given in the table are significant in AR (1) and insignificant in AR (2). Accordingly, Sargan J-statistics are statistically insignificant, therefore, instruments are valid for two-step GMM.

The first variable of CG is board size, which is negatively related to asymmetric information. However, the results of conventional financial institutions are significant, whereas the relationship with Islamic financial institutions is insignificant. Some scholars are of the view that the increase in board size increases the managing cost and is less effective for the institution's performance and may decrease the information flow. This view is postulated by the agency theory (Sougne et al., 2013). On the other side, it is resource dependency theory suggested that an expanded council might increase the relationship between institutions and other stakeholders and performance will increase. Some researchers also suggest that a large board size will increase the monitoring and information flow and decreases the information asymmetry (Agrawal and Knoeber, 1999; Anderson et al., 2004). Fama and Jensen (1983) suggested that the most pivotal role of the board is to monitor and control the management. Thus, an increase in the size of the board of directors will increase the monitoring and controlling function. These results negate the hypothesis that board size has a positive relationship with information asymmetry. The results are partially in line with the previous studies i.e. (Agyei-Mensah, 2017).

Board composition is significantly and negatively related to the information asymmetry of conventional financial institutions. However, it is positively and insignificantly related to Islamic financial institutions. Board composition is also a very important element of CG. Independent directors perform the role of the control mechanism, and they are very important for the institution's performance (Abor and Biekpe, 2007). Voluntary disclosure increases with the proportion of independent directors (Navarro and Urquiza, 2015). Independent directors effectively control managerial decisions and reduce information asymmetry (Jamalinesari and Soheili (2015). The results of CFIs support the hypothesis that board composition has a negative relationship with information asymmetry. There is also literature which supports those higher levels of independent directors increase information asymmetry (Eng and Mak, 2003; Barakoet et al., 2006). The reason could be that the independent directors might not have much power to influence the leaders in decisions making. This notion is depicted by the rooting theory (Sougne et al., 2013). The positive results of IFIs might be due to giving a

reason. The behavior of both types of institutions on board composition is different with regard to information asymmetry.

The results of CEO duality or power concentration are also contradictory between Islamic financial institutions and conventional financial institutions. CEO duality is positively and significantly related to information asymmetry for Islamic financial institutions. However, it is significantly and negatively related to conventional financial institutions. CEO duality or role duality increases the concentration of power. The literature acknowledged the fact that this hinders the independence and governance roles of the board. It also hampers the transparency and disclosure policies i.e., information asymmetry (Ntow-Gyamfi and Gemegah, 2015). However, on the other hand, resource dependency and stewardship theories assert that role duality is beneficial for the performance of the institution (Sougne et al., 2013). In this study CEO duality is not good for Islamic financial institutions in the context of information asymmetry and it aligns with the hypothesis. However, the results of the conventional financial institutions are in line with the resource dependency and stewardship theories.

It is positively and significantly related to asymmetric information for IFIs. However, it is insignificantly and negatively related to the CFIs i.e., contradictory to each other. As per the agency theory, to cater the issue of information asymmetry between shareholders and managers, shareholders assign performance-based compensation contracts to reduce adverse selection and moral hazard agency costs (Zhang, 2011). CEO's remuneration is negatively related to asymmetric information for a conventional financial institution, which depicts those incentives are correctly aligned with the performance. The results of CFIs support the hypothesis. However, for IFIs, the incentive might not be correctly aligned with the performance of the CEO, and this might be due to the nascent in nature.

Ownership concentration for the IFIs and CFIs is positively and significantly related to information asymmetry. In emerging economies, members of the founding families and related entities of the institution hold power by keeping the largest number of shares and voting rights (Byun et al., 2011). This scenario creates agency conflict between controlling shareholders and minority shareholders, which is not found in diffused ownership. This type of equity structure in business conglomerates may encourage the management to divert resources at the cost of smaller shareholders (Bae et al., 2002). Therefore, this might be the reason for a positive relation between concentrated ownership and asymmetric information and the results are in line with the hypothesis.

*Shari'ah* Board size has a negative and significant impact on the asymmetric information index. *Shari'ah* board is also playing a monitoring role in institutions like a board of directors. This is a very important organ of IFIs. The role of the *Shari'ah* board is to ensure the *Shari'ah* compliance of the institution and to guard the interest of all stakeholders. *Shari'ah* board strengthens the credibility of the institutions (Safiullah and Shamsuddin, 2018). *Shari'ah* board also plays a role to increase the transparency in the institution, as a result, it increases the confidence of the investors (AlAbbad and Saba, 2019). Hence, the *Shari'ah* board decreases the level of information asymmetry. Results are in line with the literature and hypothesis of this study.

Institution-specific control variables are leverage and growth opportunities. The relationship between information asymmetry and leverage is significant and negative. The reason might be that the agency theory postulates that monitoring cost is higher in those institutions, which are highly leveraged (Agyei-Mensah, 2017). Therefore, to decrease these costs, the institution discloses maximum information (Jensen and Meckling, 1976).

Growth opportunities are measured by price to earnings ratio. If this ratio is higher, it means the investor is willing to pay the higher price against the return of one rupee, with the expectation that he will get benefits in the future. This is an indicator of the institution's growth in the future. In literature, it is argued that institutions with higher growth opportunities face higher information asymmetry problems (Smith and Watts, 1992). This variable is insignificantly related to the information asymmetry; however, the sign is negative.

CPI is significantly and negatively related to information asymmetry. However, other both have an insignificant relationship with information asymmetry. An increase in CPI will increase the input cost of the institution and this may adversely affect the growth of the institution. Institutions may need financing to fulfill their operational cost, therefore, to get the financing, an institution may disclose more information to the creditor. This might be one of the reasons for the negative relation of CPI with information asymmetry.

The results of the construct of CG on asymmetric information index are portrayed in the above table. The impact of the construct of CG is significantly and positively related to the asymmetric information index. This positive impact shows that the governance structure of financial institutions might be weak in Pakistan. The results of the CG construct with the interaction term of Institutional quality for Islamic financial institutions are positive and significant. However, the results for CFIs are significant and negatively associated with the asymmetric information

index. Different results could be due to the reason that institution can only play their role when the CG practices are good within the FIs. Results support the hypothesis that CG has a strong relationship with information asymmetry.

Further, the relationship of institutional quality with the AII is significant and negative. It means that if the institutional quality is good. This will play a role in the smooth flow of information. When institutions are strong the financial sector performs well and plays a role in the growth of GDP (Rashid and Intartaglia, 2017). Winful et al., (2016) also concluded in their study that institutional quality plays a positive role in the performance of the stock market. Results support the hypothesis of this study.

Institution-specific variables are leverage and growth opportunities. Leverage has a significant and negative relationship with AII. This result is in line with previous results. However, growth opportunities have a positive and significant association with information asymmetry. This result is in line with the argument that institution with higher growth opportunities faces higher information asymmetry problem (Smith and Watts, 1992).

GDP is significantly and negatively associated with AII, whereas, CPI has a positive and significant relation with AII. While the relationship between KIBOR is significant and negative. A negative relationship with GDP might be due to the reason that when an economy grows, financial institutions also grow. The performance of the financial institutions is good; therefore, this plays a role in the smooth flow of information. CPI might play a role in hampering the performance of financial institutions. Therefore, the relationship with information asymmetry is positive. The reason behind the negative relationship with KIBOR could be that when KIOBR increases the cost of debt also increase, therefore, institutions might search for alternative sources of finance and one of them is equity financing. Therefore, to increase the confidence of investors, an institution might disclose more information.

## **5. Conclusion**

Information asymmetry is a state where one party has more information than the other. One of the important roles of managers is to ensure that symmetric information flows through all stakeholders. Therefore, we regressed the CG on the information asymmetric index. Results are contrary between Islamic and conventional financial institutions; however, proxies of CG play significant roles in asymmetric information. *Shari'ah* board of Islamic financial institutions has a negative relationship with information asymmetry. It means the *Shari'ah* board is

playing a due role to reduce information asymmetry. As one of the roles of the *Shari'ah* board is to ensure transparency in addition to *Shari'ah* compliance.

When we regressed CG construct on information asymmetry, the results show that CG has a positive relation with information asymmetry for Islamic and conventional financial institutions. It means that CG is not playing an effective role to reduce information asymmetry. Results showed that the interaction term of institutional quality has an impact to reduce information asymmetry. The individual effect of institutional quality on information asymmetry is negative. This shows that institutional quality does play a role to reduce information asymmetry. In sum, CG has a significant relationship with information asymmetry. The behavior of the relationship varies between Islamic and conventional financial institutions. CG of Islamic financial institutions has not played an effective role as compared to conventional to reduce the level of information asymmetry.

There are a few important implications of this study. This study shed light on the role of CG in symmetric information. Furthermore, the role of institutional quality is explored toward a symmetric flow of information. Information Symmetry is of great importance considering the role of financial institutions in economic growth. Keeping in view the differential impact of CG on information asymmetry, regulatory authorities like SBP and SECP can improve CCG and CG Regulatory Framework. This study can be extended by entering more CG variables and introducing new proxies to measure information asymmetry.



## Reference

- Aboody, D., & Lev, B. (2000). Information asymmetry, R&D and insider gains. *Journal of Finance*, 55(6), 2747–2766.
- Abor, J., & Biekpe, N. (2007). Corporate governance, ownership structure and performance of SMEs in Ghana: Implications for financing opportunities, Corporate Governance. *The International Journal of Business in Society*, 7(3), 288-300.
- Agrawal A., & Knoeber, C. (1999). Firm performance and mechanisms to control agency problems between managers and shareholders. *Journal of Financial and Quantitative Analysis*, 31, 377-397.
- Agyei-Mensah, B. K. (2017). The relationship between corporate governance, corruption and forward-looking information disclosure: A comparative study. *Corporate Governance*, 17(2), 284-304.
- AlAbbad, A., Hassan, M. K. & Saba, I. (2019). Can shariah board characteristics influence risk-taking behavior of Islamic banks? *International Journal of Islamic and Middle Eastern Finance and Management*, 12(4), 469-488.
- Allen, F. (1993). *Stock Markets and Resource Allocation*, In *Capital Markets and Financial Intermediation*, Edited by C. Mayer and X. Vives. Cambridge University Press: UK, 81-108.
- Anderson, R., Mansi, S., & David, R. (2004). Board characteristics, accounting report integrity, and cost of debt. *Journal of Accounting and Economics*, 37, 315-342.
- Arslan, M., & Alqatan, A. (2020). Role of institutions in shaping corporate governance system: Evidence from emerging economy. *Heliyon*, 6(3), 1-17.
- Arslan, M., Abidin, S., Alqatan, D., & Roudaki, J. (2019). Corporate governance in extreme institutional environment: Evidence from emerging economy. *Corporate Ownership & Control*, 17(1), 211-235.
- Aslam, E. and Haron, R. (2020). Does corporate governance affect the performance of Islamic banks? New insight into Islamic countries. *Corporate Governance*, 20(6), 1073-1090.
- Attig, N., & Morck, R. (2005). Boards, corporate governance in a typical country. *In Proceeding of 39<sup>th</sup> Annual Meeting of Coopération et de Développement Économiques*, 1-35.

- Bae, K., Kang, J., & Kim, J. (2002). Tunneling or value added? Evidence from mergers by Korean business groups. *Journal of Finance*, 57, 2695-2740.
- Barako, D. G., Hancock, P., & Izan, H. Y. (2006). Factors influencing voluntary corporate disclosure by Kenyan companies. *Corporate Governance: An International Review*, 14(2), 107-125.
- Byun, H. Y., Hwang, L. S., & Lee, W. J. (2011). How does ownership concentration exacerbate information asymmetry among equity investors? *Pacific-Basin Finance Journal*, 19(5), 511-534.
- Cai, J., Liu, Y., Qian, Y., & Yu, M. (2015). Information asymmetry and corporate. *Quarterly Journal of Finance*, 5(3), 1-32.
- Camara, A. (2001). The pricing of relative performance-based incentives for executive compensation. *Journal of Business Finance & Accounting*, 28(9), 1115-1139.
- Chau, G., & Gray, S. J. (2010). Family ownership, board independence and voluntary disclosure: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation*, 19(2), 93-109.
- Cheng, E. C., & Courtenay, S. M. (2006). Board composition, regulatory regime and voluntary disclosure. *The International Journal of Accounting*, 41(3), 262-289.
- Choi, J. J., Park, S. W., & Yoo, S. S. (2007). The value of outside directors: Evidence from corporate governance reform in Korea. *Journal of Financial & Quantitative Analysis*, 42(4), 941-962.
- Chung, K. H., & Shen, C. H. (2009). Corporate Governance and Market Reactions to Capital and R&D Investment Announcements. Available At: [http://69.175.2.130/~finman/Reno/Papers/CorpGovCapexRnDInvst\\_Chung\\_Shen.pdf](http://69.175.2.130/~finman/Reno/Papers/CorpGovCapexRnDInvst_Chung_Shen.pdf). (accessed on November 10, 2022).
- Ciner, C., & Karagozoglu, A. K. (2008). Information asymmetry, speculation and foreign trading activity: Emerging market evidence. *International Review of Financial Analysis*, 17(4), 664-680.
- Clarke, D. (2006). The independent director in Chinese corporate governance. *Delaware Journal of Corporate Law*, 31(1), 125-228.
- Diamond, D. W., & Verrecchia, R. E. (1991). Disclosure, liquidity, and the cost of capital. *Journal of Finance*, 46(4), 1325-1359.

- Elbadry, A., Gounopoulos, D., & Skinner, F. (2010). Governance quality and information alignment. *In Multinational Finance Society, Barcelona, Spain.*
- Eng, L., & Mak, Y. (2003). Corporate governance and voluntary disclosure. *Journal of Accounting and Public Policy*, 22(4), 325-345.
- Fama, E. F., & Jensen, M. C. (1983). Agency problems and residual claims. *Journal of Law and Economics* 26, 327-335.
- Farook, S. Z., & Farooq, M. O. (2011). Shariah governance for Islamic finance: Challenges and pragmatic solutions. *Bahrain Institute of Banking and Finance Working Paper*, 1813483, 1-19.
- Ferreira, M. A., & Laux, P. A. (2007). Corporate governance, idiosyncratic risk, and information flow. *Journal of Finance*, 62(2), 951-989.
- Gandia, J. (2008). Determinants of internet-based corporate governance disclosure by Spanish listed companies. *Online Information Review Journal*, 32(6), 791-817.
- Girard, A., & Rakotonjanahary, P. (2005). Le Rapport Annuel Aux Actionnaires: En Voie de Disparition? *Comptabilité Et Connaissances*, Cd-Rom.
- Gisbert, A., & Navallas, B. (2013). The association between voluntary disclosure and corporate governance in the presence of severe agency conflicts. *Advances in Accounting*, 29(2), 286-298.
- Gompers, P., Ishii, J., & Metrick, A. (2003). Corporate governance and equity prices. *Quarterly Journal of Economics*. 118(1), 107-155.
- Gul, F.A., & Leung, S. (2004). Board leadership, outside directors expertise and voluntary corporate disclosures. *Journal of Accounting and Public Policy*, 23(5), 351-379.
- Han, S. H., Kim, M., & Lee, D. H. (2014). Information asymmetry, corporate governance and shareholder wealth: Evidence from unfaithful disclosures of Korean listed firms. *Asia-Pacific Journal of Financial Studies*, 43(5), 690-720.
- Harris, M., & Raviv, A. (2008). A theory of board control and size. *Review of Financial Studies*, 21(4), 1797-1832.
- Haty, S. N. (2009). The impact of corporate governance on performance, risk and disclosure: Empirical evidence of Malaysian Listed Banks Malaysia. Doctoral Dissertation, International Islamic University, Malaysia.

- Helwege, J., & Liang, N. (1996). Is there a pecking order? evidence from a panel of IPO firms. *Journal of Financial Economics*, 40(3), 429-458.
- Jamalinesari, S., & Soheili, H. (2015). The relationship between information asymmetry and mechanisms of corporate governance of companies in Tehran stock exchange. *Procedia-Social and Behavioral Sciences*, 205, 505-509.
- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Joudi, S., Mansourfar, G., & Didar, H. (2019). Internal and external corporate governance quality, information asymmetry and cash holdings: Increase or decrease in the firm value. *Accounting and Auditing Review*, 26(1), 39-64.
- Jung, K., Kim, Y. C., & Stulz, R. (1996). Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics*, 42(2), 159-185.
- Kachouri, M., & Jarboui, A. (2017). Exploring the relation between corporate reporting and corporate governance effectiveness. *Journal of Financial Reporting and Accounting*, 15(3), 347-366.
- Kang, S., Kumar, P., & Lee, H. (2006). Agency and corporate investment: The role of executive compensation and corporate governance. *Journal of Business*, 79(3), 1127-1147.
- Klein, D. P., & Belt, B. (1994). Sustainable growth and choice of financing: A test of the pecking order hypothesis. *Review of Financial Economics*, 3(2), 141-154.
- Kornlert, P., & Uachanachit, D. (2022). The factors influencing on information asymmetry estimate by total trading volume. *Cuadernos de Economía*, 45(128), 78-86.
- Leng, J., & Ding, Y. (2011). Internal control disclosure and corporate governance: Empirical research from Chinese listed companies. *Technology and Investment*, 2(4), 286-294.
- Lin, T. J., Chen, Y. P., & Tsai, H. F. (2017). The relationship among information asymmetry, dividend policy and ownership structure. *Finance Research Letters*, 20, 1-12.

- Maali, K., Anis, J. (2017). Exploring the relation between corporate reporting and corporate governance effectiveness. *Journal of Financial Reporting and Accounting*, 15(3), 347-366.
- McLaughlin, R., Eddine, A. Sa., & Vasudevan, G. K. (1998). The information content of corporate offerings of seasoned securities: An empirical analysis. *Financial Management*, 27(2), 31-45.
- Musovaa, Z., Musa, H., & Debnarovac, L. (2017). The impact of corporate governance on information asymmetry in Slovakia. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 3(4), 35-42.
- Navarro, M. C. A., & Urquiza, F. B. (2015). Board of directors' characteristics and forward-looking information disclosure strategies. *In Proceeding of EAA Annual Conference*, 28-30.
- Nawaz, T. (2019). Exploring the nexus between human capital, corporate governance and performance: Evidence from Islamic Banks. *Journal of Business Ethics*, 157(2), 567-587.
- Nosheen, S., & Sajjad, M. F. (2018). Corporate governance, disclosure quality, and cost of equity: Evidence from Pakistan. *The Lahore Journal of Business*, 6(2), 63-91.
- Ntow-Gyamfi, M., Bokpin, G. A., & Gemegah, A. (2015). Corporate governance and transparency: Evidence from stock return synchronicity. *Journal of Financial Economic Policy*, 7(2), 157-179.
- Oluba, M. (2008). Nigeria: The equity market crisis-Causes, Solutions. Available At: <http://allafrica.com/stories/200811040483.html>. (accessed on October 12, 2022).
- Pawlina, G., & Renneboog, L. (2005). Is investment-cash flow sensitivity caused by agency costs or asymmetric information? Evidence from the UK. *European Financial Management*, 11(4), 483-513.
- Perotti, E., & Ludwig, E. T. (2003). Strategic transparency and informed trading: Will capital market integration force convergence of corporate governance? *Journal of Financial and Quantitative Analysis*, 38(1), 61-85.
- Rammal, H. G. (2006). The importance of shariah supervision in Islamic financial institutions. *Corporate Ownership and Control*, 3(3), 204-208.
- Rashid, A., & Intartaglia, M. (2017). Financial development does it lessen poverty? *Journal of Economic Studies*, 44(1), 69-86.

- Safiullah, M., & Shamsuddin, A. (2018). Risk in Islamic banking and corporate governance. *Pacific-Basin Finance Journal*, 47, 129-149.
- Sheikh, N. A., & Kareem, S. (2015). The impact of board structure, ownership concentration, and CEO remuneration on performance of Islamic commercial banks in Pakistan. *Pakistan Journal of Islamic Research*, 15(1), 49-59.
- Shleifer, A., & Vishny, R. W. (1986). Large shareholders and corporate control. *Journal of Political Economy*, 94(3), 461-488.
- Smith, C. W., & Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, 32(3), 263-292.
- Sougné, D., Laouti, M., & Ajina, A. (2013). Do board characteristics affect information asymmetry? *International Journal of Academic Research in Business and Social Sciences*, 3(12), 660-675.
- Sun, Y., Yang, Y. & Bin, L. (2012). Board independence, internal information environment and voluntary disclosure of auditors' reports on internal controls. *China Journal of Accounting Research*, 5(2), 145-161.
- Tahir, S., Qamar, M. A. J., Nazir, M. S., & Usman, M. (2019). Does corporate governance reduce overinvestment? The mediating role of information asymmetry. *Pakistan Journal of Commerce and Social Sciences*, 13(4), 1068-1084.
- Tarchouna, A., Jarraya, B., & Bouri, A. (2017). How to explain non-performing loans by many corporate governance variables simultaneously? A corporate governance index is built to US commercial banks. *Research in International Business and Finance*, 42, 645-657.
- Vermaelen, T., (1981), Common stock repurchases and market signaling: An empirical study. *Journal of Financial Economics*, 9(2), 139-183.
- Wan-Hussin, W. (2009). The impact of family firm structure and board composition on corporate transparency: Evidence based on segment disclosures in Malaysia. *The International Journal of Accounting*, 44(4), 313-333.
- Welker, M., (1995), Disclosure policy, information asymmetry, and liquidity in equity markets. *Contemporary Accounting Research*, 11(2), 801-827.

- Winful, E. C., Sarpong, D., & Agyei-Ntiamoah, J. (2016). Relationship between institutional quality and stock market performance: Evidence from emerging economies. *African Journal of Business Management*, 10(19), 469-484.
- Wu, K., Sorensen, S., & Sun, L. (2019). Board independence and information asymmetry: Family firms vs non-family firms. *Asian Review of Accounting*, 27(3), 329-349.
- Zhang, S. (2011). Asymmetric information and executive compensation contract management. *In Proceeding of International Conference on Artificial Intelligence, Management Science and Electronic Commerce*, USA.

## Appendix 1: List of Variables

Variable	Proxy	Description	Defination
Institution Size	INSZ	This variable shows the size of institution, which is measured by the asset size of the institution. Large institution has less problem of information asymmetry as compared to small institution.	Size = Log of assets
Institution Age	INAG	This variable denote the number of years from its inception. Old institution are less vulnerable to information asymmetry as compared to new institutions.	FRAG: number of years from inception.
Number of Shareholders	NSH	By increasing the number of shareholder the volume of information increases, results less information asymmetry.	NSH: Total number of shareholders
Tobin'Q	TQ	It provides an estimate of the value of assets of institution and growth opportunities.	Tobin's Q Ratio= Equity Market Value/Equity Book Value
Intangible Asset	INTAS	It includes the asset such as market power, goodwill, quality of the management and etc	INTAS: Value of intangible asset
Control Variables/Institution Specific Variables			
Leverage	LEV	Financial leverage of the company which is equal to company's total debts divided by its total assets	LEV = Total Debt/ Total Asset
Opportunities for Growth	GRTOPR	Institution with high growth opportunities faces information asymmetry problems.	GO = Market Price/ Earnings Per Share
Gross Domestic Product	LGDP	It is the gross domestic product of the country.	It is the log of GDP
Consumer Price Index	LCPI	It is a measure to gauge the increase in prices of certain goods and services.	Log of the Yearly data of inflation in country
Karachi Interbank Offer Rate	KIBOR	This is a pricing benchmark used for financing	Yearly value of the KIBOR



## Appendix 2: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
CG Variables					
BSIZ <sup>CFI</sup>	347	8.156	1.52	4	13
BSIZ <sup>IFI</sup>	331	6.163	2.126	3	14
BCOM <sup>CFI</sup>	347	1.369	1.502	0	8
BCOM <sup>IFI</sup>	331	0.61	1.051	0	4
CEOD <sup>CFI</sup>	346	0.922	0.269	0	1
CEOD <sup>IFI</sup>	331	0.13	0.337	0	1
CEOR <sup>CFI</sup>	347	36.77	41.96	0.20	377.00
CEOR <sup>IFI</sup>	327	12.92	17.03	0.30	100.00
OWNC <sup>CFI</sup>	347	67.764	20.162	15	99
OWNC <sup>IFI</sup>	331	60.181	22.754	23	100
SBS <sup>IFI</sup>	331	1.147	1.245	0	4
Information Asymmetry Proxies					
INSZ <sup>CFI</sup>	347	10.535	1.121	7.836	12.429
INSZ <sup>IFI</sup>	331	9	0.878	6.119	11.893
INAG <sup>CFI</sup>	347	33.527	23.084	1	85
INAG <sup>IFI</sup>	331	17.211	8.436	1	37
NSHR <sup>CFI</sup>	335	14635.64	21507.62	30	109200
		2	8		
NSHR <sup>IFI</sup>	319	3605.417	5235.759	5	40604
INTAS <sup>CFI</sup>	347	6.299	3.162	0	10.44
INTAS <sup>IFI</sup>	331	3.861	3.427	0	9.5
TQ <sup>CFI</sup>	347	2.117	4.822	-63.035	32.706
TQ <sup>IFI</sup>	263	0.125	0.416	0	2.544
OWNC <sup>CFI</sup>	347	67.764	20.162	15	99
OWNC <sup>IFI</sup>	331	60.181	22.754	23	100
Institution Specific Variables					
LEVER <sup>CFI</sup>	347	0.742	0.997	0.244	0.979
LEVER <sup>IFI</sup>	331	0.460	0.309	0.0117	0.98
GRTOPR <sup>CFI</sup>	347	-26.737	758.606	-	314.904
				14106.192	
GRTOPR <sup>IFI</sup>	263	12.303	83.584	-246.588	907.627
CEOR is in million rupee					