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The Impact of Corporate Governance Mechanism on Agency Cost: An Empirical Evidence of Pakistani Listed Companies

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Abstract: This study attempts to investigate the role of Corporate Governance in mitigating agency cost. For this purpose a sample of 100 firms selected on the basis of 100 INDEX of Karachi Stock Exchange during the period 2007 to 2011. To do so, alternative proxies for agency costs are employing: the ratio of total sales to total assets (asset turnover) and the ratio of selling, general & administrative expenses (SG&A) to total sales. Multivariate fixed effect regression is used to analyze the data. The explanatory variables include director ownership, institutional ownership, ownership Concentration, board size, CEO/Chair duality, Non Executive Directors, Debt Ratio, remuneration structure and board independence. The analysis is controlled for the influence of company size. The results show that higher director and institutional ownership reduces the level of agency cost. Smaller sized boards also results in lowering agency cost. Board independence has positive association with asset utilization ratio. The separation of the post of CEO and chairperson and higher remuneration lower agency cost. Bank debt constitutes one of the most important Corporate Governance devices for Pakistani Listed Companies. Also, managerial ownership, managerial compensation and ownership concentration seem to play an important role in mitigating agency costs.

Keywords: Corporate governance, Ownership structure, Agency cost, Karachi stock exchange.

1. Introduction

Corporate Governance (CG) is a frequently used terminology to explicate the process and structure that is used to manage and direct the proceedings of a company and the key objective of these practices is to increase the wealth of shareholders. CG has attracted the attention of public in the recent past years because of its perceptible importance for businesses as well as for society that has been indicated in the 1997 and 1998 during the financial crises of Asia and further in topical global fiscal crises (Rachagan, 2010). Unsatisfactory and inoperative CG mechanisms are considered two main reasons that are accountable for creating and speeding up the fading conditions of the crises (Suto, 2003).

Maijoor (2000) is of the argument that CG issues, like monitoring means are much associated to agency theory (A_T). The division of ownership and controlling direct to clash of the principal and such as the agents may perform their personal interest at the cost to the principal's (Jensen and Meckling, 1976; Shleifer and Vishny, 1986; Ugurlu, 2000). As a consequence of this disagreement of interests between management and owners, unevenness in information might be created and resulted in agency costs (A-C) (Farrer and Ramsay, 1988). Numerous ways have already been recommended to diminish these costs. Jensen and Meckling (1976) Suggested a model "the convergence of interest model". It assumes that the A_C increase as an outcome of the partition of ownership and control.

Governance issues came back to consideration after topical accounting irregularities in U.S.A (Ghosh, 2007). Inadequate governance mechanisms and malfunctions are said to be the main factors responsible for causing and accelerate deterioration of the crisis. It is already discussed that monitoring mechanism as a CG issue is closely linked to the A_T (Maijoor, 2000). Although much of the valuable information provided by the literature, however, only a small number of studies address the issues of measuring the main variables directly, which is the agency cost.

The agency relationship in simple is an agreement in a person (principal) and another person (an agent) to perform some services that also include passing some power to make decision (Jensen and Meckling, 1976). In the relationship between shareholders and board of directors, shareholders are as the principal and board of director is the agent. According to them, agents will not for all time take action in the wellbeing of the principals. This condition occurred in the relationship between managers and shareholders. Managers are responsible for the daily

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operations of the company, as they are agents of the shareholders to have inside information that can be used for personal benefits. So there is a conflict between the two parties, because their interests are not perfectly aligned.

Different mechanisms have been recommended to avoid the agency problem and to diminish the agency costs. These mechanisms consist of high quality external auditors, listing on foreign stock exchanges, small size boards, debt financing, splitting the CEO and chairman position and monitoring through financial institutions. Past researches which focus on CG and agency cost relationship are of [Ang et al. \(2000\)](#), [Doukas et al. \(2000\)](#) and [Singh and Davidson \(2003\)](#), [Henry \(2004\)](#) and [Fleming et al. \(2006\)](#) and [Doukas et al. \(2005\)](#).

Most of the work done on this issue covers only developed countries, and there is a lack of research in developing countries, and therefore to fill this gap, this study attempts to explore whether the results obtained in developed countries also applied to developing countries. The objective of this study is to analyze the different mechanisms of CG and study their impact on agency cost in Pakistan for a large sample of listed companies. For this purpose different CG and ownership structure variables studied in the literature.

The main objective of the research work is to assess the effectiveness of CG, ownership structure and capital structure in diminishing or managing the costs occur due to agency problem in the companies of Pakistan listed in the "Karachi Stock Exchange", during 2007 to 2011. The study not only made addition in literature about factors that facilitate in extenuating the agency cost problems but also have intimation for CG improvement procedures in Pakistan.

1.1. Case of Pakistan

In Pakistan Securities & Exchange Commission of Pakistan (SECP) is controlling and policy making authority for corporations. In Pakistan reasonable work is done on CG, [Cheema et al. \(2003\)](#) has discussed agency issues but their work remained limited to ownership structure of companies in Pakistan. [Gani and Ashraf \(2005\)](#) studied different trade clusters in relation to CG. They took data of companies from 1998 to 2002. [Hassan et al. \(2009\)](#) observed the relationship of ownership structure and CG on capital structure during the period of 2002 to 2005. [Ashraf and Gani \(2005\)](#) found the factors that influenced the origin and growth of secretarial practices in CG in Pakistan. [Shahid and Nishat \(2004\)](#), [Tariq and Butt \(2008\)](#) and [Humera \(2010\)](#) also examined the connection of CG and firm performance. The pioneer research work which address agency problems in Pakistan done by [Gull et al., \(2012\)](#). They examined agency problems and the role of CG and ownership structure in preventive A_C, in particular after the commencement of code of CG in Pakistan in 2002.

2. Literature Review

2.1. Agency Costs and Governance Mechanisms

Numerous studies reveal experiential research on the link between Governance Mechanisms and firm performance. The increase in firm performance means losing agency costs. Most of the empirical research on CG has its hypothetical extraction from Agency Theory (A_T), and is interested to link different features of CG with company performance. A_T theorists are to hinder managerial opportunities and its harmful impacts on firm recital, Shareholders can employ various corporate CG mechanisms, which include supervising through board of directors ([Fama and Jensen, 1983](#)) and large outside shareholding ([Demsetz and Lehn, 1985](#)). Additionally, inside governance procedures including equity based inducement to managers can bring into line the interests of managers and shareholders ([Jensen and Murphy, 1990](#)), even though high equity owned by manager be able to direct towards ascertain behavior. Lastly, exterior aspects as the risk of invasion, product rivalry, and labor market can restrain managerial opportunities ([Shleifer and Vishny, 1997](#)).

2.2. Managerial Ownership (MAN_OWN)

The clash of interest between agents and Principals happen mainly from taking apart of possession and control. Past researches recommend that the managers are motivated to hold the firms' shares to keep an eye on management ([Fleming et al., 2006](#)). It reasoned that the higher the stock held by managers, the more responsibly they enhance the worth of the firms. [McKnight and Weir \(2009\)](#) found that rising board ownership is helpful in reducing A-C of the U.K firms; another study by [Yang et al. \(2008\)](#) on Taiwanese registered firms, proposed that ownership by top managers should be motivated to decrease A-C.

[Mustapha and Ahmad \(2011\)](#) highlighted managerial ownership as an instrument utilized to line up the attention of management and equity holders of Malaysian public limited companies. [Ang et al. \(2000\)](#), further found that A-C rises with increase in non manager's ownership; they used data of small firms for this purpose. The agency cost is high when an outsider manager runs the company, and is negatively associated to the managerial ownership. [Singh and Davidson \(2003\)](#) added in it by using large American firms and found weak support that increasing ownership of managers can minimize agency problems in the US companies.

2.3. Ownership Concentration (OWN_CON)

Another choice for mitigating agency problems is OWN_CON. Hypothetically, shareholders/owners can take themselves a dynamic role in scrutinizing the managers. Supervising benefits for shareholders are balanced to their investment. According to [Grossman and Hart \(1988\)](#) a common investor has little or no encouragement to exercise monitoring behavior. On the contrary, investors with significant investment have more enticement to oversee

managers and can do so more successfully (Shleifer and Vishny, 1997), (Friend and Lang, 1988). Generally, the investors with higher quantity of shares have stronger incentives to supervise and, therefore, guard their investment. With the aim to investigate the relationship of OWN_CON and A-C, this study uses the quantity of shares held by the five biggest investors as a measure of OWN_CON.

2.4. Institutional Ownership (INST_OWN)

Institutional investors play a role in justifying A-C problems as they keep an eye on company performance and acts of managers and also be able to control decision making by managers. Study of Henry (2004) discovered that institutional shareholders monitor performance of managers as compare to small or individual investors who are less knowledgeable at lower expenditure as they have superior knowledge and resources. On the contrary, Singh and Davidson (2003) supported that external Institutional ownership does not have a considerable impact on A-C, they measured by using asset utilization as proxy for agency cost, for US public limited firms. These results are consistent with Doukas *et al.* (2000) and McKnight and Weir (2009).

2.5. Board Size (T_D)

The position of the Board of directors (BOD) is very important for any firm, in particular when we examine agency problems because it is the BOD that is working for the shareholders by supervising the all the activities of the company and make certain that shareholder rights are not in danger (Hassan *et al.*, 2009). Boards that are smaller in size are extra organizationally functional (Gull *et al.*, 2012). Singh and Davidson (2003) found affirmative and significant relationship between board size and asset_utilization ratio. On the contrary Florackis and Ozkan (2004) found that board size has negative relationship with A-C. They explained, if the board is larger the agency costs will be higher because of less effectiveness of board. The basic concept behind this is that larger board resulted in less harmonization in communication and decision making as compared to the case of small board.

2.6. Independent Directors (IND)

The composition of a BOD is also very critical. Board independence is supposed as a controlling device that plays a vital role in restraining or monitoring agency problems. Various researches in the literature revealed the role of IND directors and recommended that IND directors are expected to play their role in favor to the protection of investors, for instance Lin *et al.* (2003), suggested a positive reaction in share price after the selection of outside directors on board, especially when directors ownership is low and the IND directors hold strong supervising incentives. These results are consistent with the outcomes of studies by (Brickley *et al.*, 1994) and (Borokhovich *et al.*, 1996) that higher representation of independent directors on the board will reduce agency costs. McKnight and Mira (2003) and Henry (2004) also found that A-C will reduce if there are high numbers of independent directors on BOD.

2.7. Non Executive Directors (NED)

Boards that have larger number of NED are more probable to work for best wellbeing of shareholders. For instance, Brickley *et al.* (1994) and Borokhovich *et al.* (1996) concluded that non executive directors more probably perform for the protection of shareholders' welfare. Fama and Jensen (1983) and Kaplan and Reishus (1990) also revealed that non executive directors are motivated as an efficient supervisor in the board's decisions due to lawsuit fear, reputation concerns and the demand of their services in market. Rosenstein and Wyatt (1990) found a positive link between non executive director and firm performance. In contrast Agrawal and Knoeber (1996) and Ang *et al.* (2000) found contrary outcomes. They explain that NED are generally have less information about business and for this reason they hesitate to play provoking role instead to be a serious monitoring authority.

2.8. Duality (DUA)

Cadbury (1992) presented a report on CG and advised that the CEO and the Chairman of board ought to be two separate positions. Fama and Jensen (1983) reports that agency problem can be controlled by dividing the positions of CEO and chairman, which means separating monitoring and implementation of strategic decision. The duty of the chairman is to run board meetings, as well to monitor the hiring, firing process, and compensation of the CEO. Thus if both positions are held by same person, it will be very tough for the board to accomplish its key objective i.e., to assess managers' performance. So the existence of an independent chairman is critical in board for decision making. However on the contrary, it is revealed that Chair/CEO role duality does not appear to have any impact on agency co (Florackis and Ozkan, 2004); (McKnight and Mira, 2003). McKnight and Weir (2009) in a research work on U.K listed companies also discovered that Chairman/CEO (duality) does not perform any significant role in reducing A-C. Duality is given the value "0" if CEO and chairman are different and "1" otherwise.

2.9. Managerial Compensation (Salary)

One more significant element of CG is the compensation that is given to company management. It is expected that better the compensation packages of directors the lesser will be the A-C because high remuneration will encourage management to perform in favour of firm's shareholder with the aim of constantly obtain these incentives and to safeguard their job. Studies by Core *et al.* (2001) and Murphy (1999) proposed that remuneration packages can induce management to perform actions that make the most of investors' wealth. On the other hand Henry (2004)

concluded that impact of compensation on A-C, taking asset_utilization ratio as proxy measure, is negative. It indicates that greater compensation packages of directors do not diminish A-C.

2.10. Debit

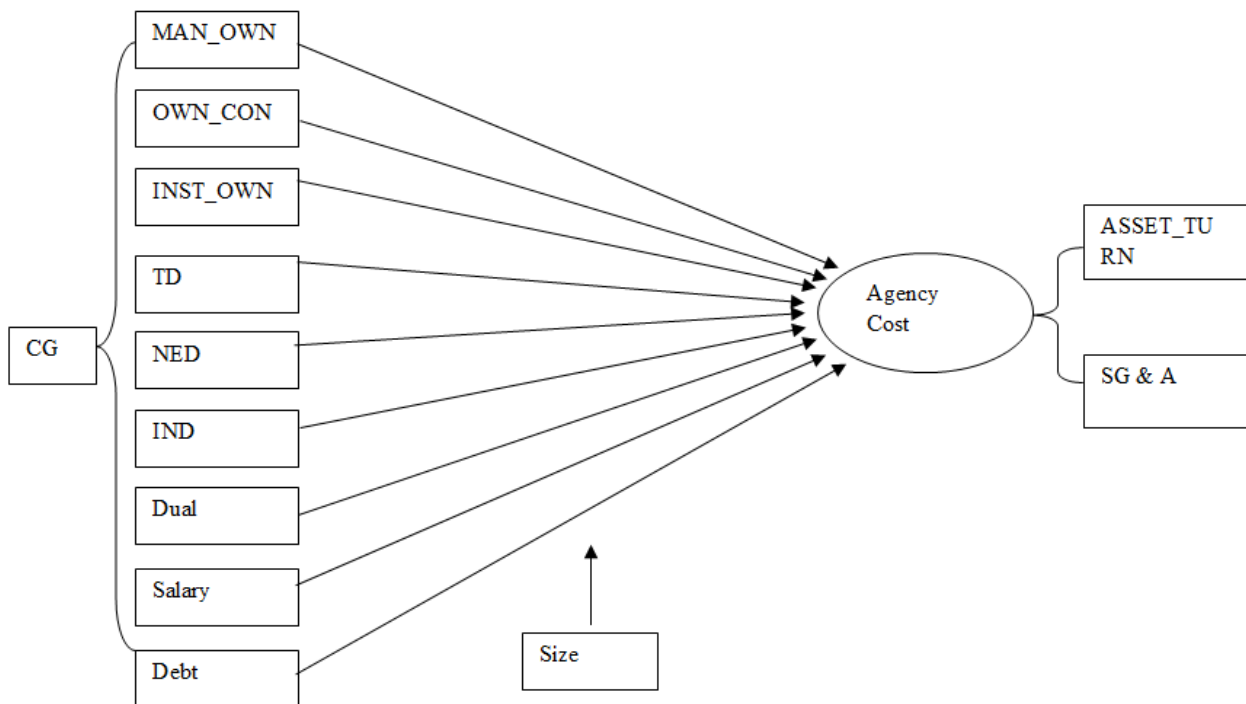
Companies with high level of debt are more strictly examined by debt holders and therefore management has few opportunities to chase non value maximizing goals. Li and Cui (2003), in their research confirmed that higher debt ratio resulted in higher asset_utilization ratio. Consequently, they proved a negative association between debt and A-C. McKnight and Weir (2009) added that debt decreases agency costs.

2.11. Size of Firm (Assets)

Doukas et al. (2000) explained that large companies are more probable to have high A-C because of their more convoluted and the higher difficulties faced by shareholders regarding information. Consistent with Singh and Davidson (2003), the research is controlled by firm size measured in terms of sales. Size of firm may possibly detain firm’s variety in case of large corporations; therefore asset_utilization may get better with size for the reason that difference business lines having synergy. It is possible to argue that companies are capable to make elevated sales revenue from different business lines without having the duplicate asset base for each business division.

2.12. Conceptual Framework

The empirical model includes CG variables related to firm’s ownership, board, compensation and capital_structure. These explanatory variables include director ownership, institutional ownership, ownership Concentration, size of board, duality, Non-Executive Directors, Debt Ratio, remuneration structure and board independence. Control variable is also incorporated i.e the logarithm of total sales as a proxy for firm size (SIZE). The dependent variable is A-C. Alternative proxies for A-C are employing: the ratio of total sales to total assets (asset turnover) and the ratio of selling, general and administrative expenses (SG&A) to total sales. Study has discussed all important elements in literature which conceptual framework consists of.



3. Data and Methodology

3.1. Sample Data

For this study, the data involves the examination of annual reports for five years (2007-2011) of Pakistani companies listed on the Karachi Stock Exchange (KSE). Research is based on data taken from financial analysis of non financial companies listed on KSE that is issued by Statistics and Data Warehouse Department of State Bank of Pakistan (SBP). The data has been collected from Audited Annual Reports. These reports are obtained from companies’ official websites and from KSE website of the entire population of KSE 100 Index. The duration of the study consist of five years from 2007 to 2011. Fixed effect multivariate regression analysis is used in order to examine the role of governance and ownership attributes in justifying A-C. Information regarding the variables is derived from the annual reports. For this study panel data is used. A total of 425 cross sectional observations for 85

companies from year 2007 to 2011 were collected. Total 85 observations per year were collected. Companies with negative equity and having duplicated data in SBP financial analysis report is excluded from study.

3.2. Dependent Variable

Two alternative proxies are used to measure A-C that are Asset turnover and the expense ratio. These proxies are taken following the previous work of [Ang et al. \(2000\)](#), [Singh and Davidson \(2003\)](#), [Fleming et al. \(2006\)](#) and [Florackis \(2008\)](#).

Asset Turnover is ratio of annual sales to total assets as an inverse proxy for A-C. This ratio is also called asset utilization ratio that is obtained by dividing total revenues by total assets. This ratio shows how successfully management disposes the company's assets. A high asset turnover ratio means a large amount of sales and eventually cash flows that are obtained from specified assets. At low asset utilization ratio, A-C will be higher because the firm is not making productive use of its resources and firm's management has failed to make best use of its assets. We can explain it as a low asset turnover ratio indicates that companies are making non optimal investment decisions or put in their funds in projects which are not productive and most likely value destroying projects. Therefore it is observed that firms having substantial agency conflicts have low asset turnover ratios relative to those having less agency clashes.

Expense ratio is measured in terms of selling, general and administrative (SG&A) expenses to sales ([Ang et al., 2000](#); [Florackis, 2008](#); [Singh and Davidson, 2003](#)). Expense ratio is a direct proxy of A-C. These expenses include salaries, agents' commissions to facilitate transactions, travel expenses for executives, advertising and marketing costs, rent and other utilities. Therefore, expense ratio reflects managerial prudence in spending company's resources. [Singh and Davidson \(2003\)](#) pointed out, "management may use advertising and selling expenses to camouflage expenditures on perquisites".

3.3. Independent Variables

An empirical model includes a set of CG variables that are related to firm's ownership, board, compensation and capital structure. Control variable is also included that is the logarithm of total Assets as a proxy for firm size (SIZE). Systematic definitions of all these variables are given in [Table 1](#).

Table-1. List of Variables

Sr. #	Variable	Symbol	Definition
1	ASSET_TURN	Y_1	The ratio of annual sales to total assets
2	SG&A	Y_2	The ratio of selling, general and administrative expenses to total sales
Ownership Structure			
1	MAN_OWN	X_1	The percentage of equity ownership held by all company directors (Henry, 2004)
2	OWN_CON	X_2	The sum of the square of largest five stakes of firm's shareholders
3	INST_OWN	X_3	The total percentage shareholding of all institutional shareholders (Henry, 2004).
Board Structure			
4	T_D	X_4	The total number of directors on the board
5	NED	X_5	The ratio of the number of non-executive directors to the number of total directors on the board
6	IND	X_6	The number of independent directors on the board relative to total number of board members (Henry, 2004).
7	DUAL	X_7	A dummy variable that takes the value of "1" when the roles of CEO and Chairperson are the same person and "0" otherwise (McKnight and Weir, 2009).
8	SALARY	X_8	The total salary paid to executive directors scaled by total assets
Capital Structure			
9	T_DEBT	X_9	The ratio of total debt to total assets (Article 4 used same ratio)
Control Variables			
10	SIZE	X_{10}	Total Assets (in logarithm)

3.4. Hypothesis

In the light of literature and past studies results the hypotheses of the study are as below;

H₁: The greater the managerial ownership, the lower the agency costs.

H₂: The greater the ownership concentration, the lower the agency costs.

H₃: The greater the institutional ownership, the lower the agency costs.

H₄: Agency costs will be lower when companies have boards that are small in size.

H₅: The greater the percentage of non-executive directors on the board, the lower the agency costs.

H₆: The higher board independence, the lower the agency costs.

H₇: Agency costs will be lower when companies have two different persons acting as a CEO and chairperson.

- H₈: The increasing pay and bonuses of management, the lower the agency costs.
- H₉: The greater the leverage, the lower the agency costs.
- H₁₀: Larger firms have higher agency costs.

3.5. Methodology

3.5.1. Regression Model Equation

Fixed effect multivariate Regression analysis is used in this study to test the association between the various independent variables and the measures of agency costs. The regression line estimates the relationship between a dependent variable and one or more independent variables. General Equation for multiple regression equation for a population is:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \dots + \beta_n X_n + e_i$$

Left side (Y) of the equation denotes the dependent variable while at right side β_1 specifies the coefficient of first independent variable (X1) and β_2 is the coefficient of second independent variable (X2) and β_n specifies the coefficient of nth independent variable (Xn). e_i is the difference of predicted and observed value of Y for the i^{th} variables. Thus the regression equation for this study is as follows:

$$ASSET_TURN = \beta_0 + \beta_1 MAN_OWN + \beta_2 OWN_CON + \beta_3 INST_OWN + \beta_4 T_D + \beta_5 NED + \beta_6 IND + \beta_7 DUAL + \beta_8 SALERY + \beta_9 T_DEBT + \beta_{10} TA + e_i$$

Where e_i is the disturbance term and β_1, \dots, β_9 are the Beta coefficients. The multicollinearity assumptions in the regression model tested, based on the correlation matrix as well as the variance inflation factor (VIF).

The collinearity test is applied through Statistical packages of social sciences. The values of Tolerance are closer to “1” in the regression tables means less multicollinearity in variables. On the other hand according to Kennedy (1992) VIF is a more accurate and indicative method that is broadly used for the independent variables to find collinearity. Correlation coefficient is supposed problematic if it goes beyond 0.8 (Studenmund, 1992). A Test called Durbin Watson (DW) test is used to identify first order autocorrelation problem. The value of DW closer to 2 indicates that the regression model is the appropriate method (Neter et al., 1996).

4. Data Analysis

4.1. Descriptive Statistics

Descriptive statistics of the study shows that Asset turnover Ratio has mean value of 1.14085 and standard deviation value of 1.011375. In contrast to it Expense Ratio has low mean value of 0.14130 and standard deviation value of 0.312295. Managerial Ownership has 11.24577 and 19.599580 values of mean and standard deviation. Ownership Concentration has mean value of 2860.08529 and standard deviation value of 2268.515086.

In CG variables Total Directors has mean value of 8.773 and standard deviation value of 1.9877. Non Executive Director are taken as percentage of NED to total directors that have 58.45836 mean value and it deviates from its mean up to 29.166144. Similarly IND has 48.12641 mean values; it can deviate from this mean value to 32.449139.

Salary that is measured in terms of remuneration paid to executive directors scaled by total assets has 0.01316 and 0.016132 values as mean and standard deviation. Ratio of Total Debt to Asset has .56665 mean and .455682 standard deviation value. Firm size in terms of Log of Assets has mean value of 10.1171 and deviation value of 0.65503.

Table-2. Descriptive Statistics

Variables	Mean	Std. Deviation	N
Asset Turn Over Ratio	1.14085	1.011375	417
Expense Ratio	.14130	.312295	414
Managerial Ownership	11.24577	19.599580	419
Ownership Concentration	2860.08529	2268.515086	419
Institution Ownership	70.15201	27.948651	419
Total Directors	8.773	1.9877	419
Non Executive Directors	58.45836	29.166144	419
Independent Directors	48.12641	32.449139	419
Duality	.138	.3458	419
Salary	.01316	.016132	419
Ratio of Total Debt to Asset	.56665	.455682	419
Log of Assets	10.1171	.65503	419

4.2. Pearson's Correlation

Table 3 contain the values of the Pearson's Correlation among the variables. The results of the relationship of A-C and independent variables are given in this table. Asset turnover is positively correlated with salary (Florackis, 2008) (Gull *et al.*, 2012) Ownership concentration (Wang *et al.*, 2010) and institution ownership (Gull *et al.*, 2012). All these results are significant at 5 % level of independence. Debt ratio and board size (Wang *et al.*, 2010) are also positively correlated to asset_turnover but this relationship is not significant. On other hand, managerial ownership, NED (Singh and Davidson, 2003) (Florackis, 2008) and independent directors (Nazir and Saita, 2013) are negatively and significantly related with asset_turnover. Firm size and duality are also negatively correlated to asset_turnover but this is not significant. Florackis in 2008 also found the same results.

The results for the second proxy for A-C, Expense (Exp) Ratio are also similar with few exceptions and with opposite signs. This is elucidated by the fact that Exp Ratio is a direct proxy for A-C. Exp Ratio is positively and significantly related with Duality that is in similar to the results of (Wang *et al.*, 2010) and salary. (Florackis, 2008) and (Wang *et al.*, 2010) also found the same results. Exp Ratio is also positively related with NED (Florackis, 2008), Debt ratio, MAN_OWN (Gull *et al.*, 2012) (McKnight and Weir, 2009) and OWN_CON (Wang *et al.*, 2010). On the other hand, size (Florackis, 2008) (Nazir and Saita, 2013) and institution ownership are found to be negatively and significantly correlated with Exp ratio. T_D and IND directors are also negatively correlated to asset_turnover but this is not statistically significant at 5% level of independence.

Table-3. Pearson Correlation

		Asset Turn Over	Ex. Ratio	MAN_OWN	OWN_CON	INST_OWN	T_D	NED	IND	Dua	Salary	T_Debt	Size
Asset Turnover	Correlation Sig. 2-tail	1											
Exp. Ratio	Correlation Sig.2-tail	-.095 .054	1										
Man Own	Correlation Sig.2-tail	-.129** .008	.037 .455	1									
Own Con	Correlation Sig.2-tail	.244** .000	.013 .790	-.354** .000	1								
Inst Own	Correlation Sig.2-tail	.178** .000	- .118* .016	-.765** .000	.515** .000	1							
T Dir	Correlation Sig.2-tail	.046 .357	-.044 .371	-.222** .000	.242** .000	.297** .000	1						
NED	Correlation Sig.2-tail	-.184** .000	.002 .969	-.085 .082	.062 .207	.024 .623	.013 .796	1					
IND	Correlation Sig.2-tail	-.189** .000	-.011 .817	.026 .596	-.004 .942	-.099* .043	- .108* .027	.430** .000	1				
Duality	Correlation Sig.2-tail	-.005 .918	.255** .000	-.016 .747	.054 .267	.028 .568	- .177** .000	-.093 .057	-.080 .103	1			
Salary	Correlation Sig.2-tail	.409** .000	.185** .000	-.238** .000	.455** .000	.257** .000	.113* .021	- .148** .002	- .121* .014	.122* .012	1		
T_Debt	Correlation Sig.2-tail	.047 .337	.041 .404	-.023 .640	.094 .054	.035 .469	.155** .001	.007 .880	-.025 .616	-.079 .108	.053 .282	1	
Size	Correlation Sig.2-tail	-.014 .770	- .249** .000	-.332** .000	.142** .004	.393** .000	.403** .000	-.045 .355	- .200** .000	- .175** .000	-.102* .037	.192** .000	1
N (Sample Size)		417	414	419	419	419	419	419	419	419	419	419	419

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

4.3. Multivariate Analysis

This section contains the results of the regression analysis. Analysis is run separately for both of the dependent variables that are used as proxies of A-C. The fixed effects regression model results are provided in Tables explained below.

4.3.1. Regression Results of Governance Mechanisms and Asset_Turnover Ratio

Based on VIF found in the study, it is improbable that multicollinearity influence the regression results. The VIFs of all independent variables are below 2. Collinearity is regarded as problematic if VIF exceeds 10 (Neter *et al.*, 1983). Therefore these results indicate that there is no multicollinearity in the regression model.

$$\text{ASSET_TURN} = 1.047 - 0.002(\text{MAN_OWN}) - 1.464 (\text{OWN_CON}) + 0.000 (\text{INST_OWN}) - 0.033 (\text{T_D}) + 0.000 (\text{NED}) + 0.001 (\text{IND}) - 0.148 (\text{DUAL}) + 6.618 (\text{SALERY}) - 0.010 (\text{T_DEBT}) - 1.908 (\text{TA}) + e_i$$

The results of regression analysis, while taking Governance Mechanisms and Asset_turnover ratio, indicate a significant and positive relationship between asset_turnover and salary that could reduce agency costs effectively. From the equity structure of Pakistani listed companies, the ownership of managers is high and they could be motivated with inducements to align with the maximization of shareholders' wealth. It will result in A-C reduction because high remuneration will encourage management to perform in support of firm's shareholder with the aim of constantly obtain these incentives and to safeguard their job. These results are consistent with the studies of (Murphy, 1999) and Core *et al.* (2001), Florackis (2008) and Gull *et al.* (2012).

The relationship between the asset turnover and IND is positive but not significant. These results are consistent with the outcomes of studies by Brickley *et al.* (1994) and Borokhovich *et al.* (1996) and Lin *et al.* (2003), that higher representation of independent directors on the board will reduce agency costs. McKnight and Mira (2003) and Henry (2004) also found that A-C will reduce if there are high numbers of independent directors on BOD. The relation between the asset turnover and INS_OWN is positive but not significant. It discovered that institutional shareholders monitor performance of managers as compare to small or individual investors who are less knowledgeable at lower expenditure as they have superior knowledge and resources. Henry (2004) also supported these results.

T_D has a significantly negative relationship with asset turnover. It means the board is larger the agency costs will be higher because of less effectiveness of board. Various other studies Singh and Davidson (2003), Beiner *et al.* (2004), Florackis and Ozkan (2004), Florackis (2008) and Gull *et al.* (2012) supported it that larger boards are less efficient than smaller boards with the facts that size of board is negatively allied with asset_turnover. The basic concept behind this is that larger board resulted in less harmonization in communication and decision making as compared to the case of small board.

Firm Size also significantly and negatively correlated with asset_turnover ratio that is consistent with the prior studies of Doukas *et al.* (2000) and Wang *et al.* (2010). This proves that large companies are more probable to have high A-C because of their more complication and the more difficulties faced by shareholders regarding information. Duality also significantly negatively correlated with asset turnover ratios that revealed that duality does not appear to have any impact on A-C. Prior studies (Gull *et al.*, 2012; McKnight and Mira, 2003; McKnight and Weir, 2009) (Florackis and Ozkan, 2004) are consistent with this research work that Chairman/CEO (duality) does not perform any significant role in reducing A-C.

There is negative relationship between the asset turnover and OWN_CON but these are not significant. This relationship is affected by various complex factors. Due to interest conflicts between large and minor shareholders, OWN_CON may not be capable to reduce A-C. However, agency costs could increase due to burrow behavior.

There is negative relationship between the asset_turnover and MAN_OWN. At some high level of MAN_OWN, although managers apply inadequate efforts, work for personal wellbeing and establish at the cost to other shareholders. Thus there is non-linear association between the two.

The negative relationship of NED with asset_turnover means that in Pakistan NED generally have less information about business and for this reason they hesitate to play provoking role instead to be a serious monitoring authority. Ang *et al.* (2000), Singh and Davidson (2003) and Florackis (2008) also hold up same arguments. The ratio of total debt to total assets is negatively associated with Asset_turnover ratio, but this relationship is insignificant. These results are contrary to expectations the reason is small sample size and the Global market recession conditions.

Table-4. Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate	Durbin-Watson	F	Sig.
1	.875 ^a	.765	.758	.496373	1.991	108.861	.000

a. Predictors: (Constant), Log of Assets, Non Executive Directors, Ownership Concentration, Ratio of Total Debt to Asset, Duality, Long term debt Ratio, Total Directors, Managerial Ownership, Independent Directors, Salary, Institution Ownership, Log of Sales (Size).

b. Dependent Variable: Asset Turn Over Ratio

Table-5. Panel data fixed effects regressions of governance mechanisms and agency costs–Asset Turnover ratio

Model	Un standardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.047	.464		2.259	.024		
Managerial Ownership	-.002	.002	-.047	-1.226	.221	.391	2.557
Ownership Concentration	-1.464E-5	.000	-.033	-1.040	.299	.579	1.727
Institution Ownership	.000	.002	.006	.130	.896	.317	3.152
Total Directors	-.033	.014	-.064	-2.326	.021	.763	1.311
Non Executive Directors	.000	.001	-.025	-.893	.373	.760	1.315
Independent Directors	.001	.001	.021	.752	.452	.733	1.365
Duality	-.148	.074	-.051	-2.013	.045	.913	1.095
Salary	6.618	1.876	.106	3.527	.000	.647	1.546
Debt Ratio	-.010	.056	-.004	-.177	.859	.913	1.095
Log of Assets	-1.908	.078	-1.241	-24.490	.000	.228	4.385

a. Dependent Variable: Asset Turn Over Ratio

Table 4 shows the value of R square that is 0.765 and the value of F Statistic is 108.86 that is significant at 1% level. The R2 implies that the 76.5 percent of the variation in A-C is explained by CG characteristics while taking asset utilization ratio as an A-C. The value of Durbin Watson is 1.991 and of VIF also near about 2 so it means that there is no collinearity in the model. The graph shows the normality of data collected.

4.3.2. Regression Results of Governance Mechanisms and Expense Ratio

In 2nd model where the asset_turnover ratio is replaced by Exp ratio, the regression equation is explained as follows;

$$EXP_RATIO = 1.141 - 0.002 (MAN_OWN) - 1.346 (OWN_CON) - 0.002 (INST_OWN) - 0.012 (T_D) + 0.000 (NED) + 0.000 (IND) + 0.203 (DUAL) + 3.030 (SALERY) + 0.051 (T_DEBT) - 0.102 (TA) + ei$$

The findings indicate a significantly positive relationship between expense ratio and salary that is consistent with the studies of (Wang *et al.*, 2010). Duality is also positively and significantly correlated with expense ratio. The relations between the expense ratio and NED, TD (Wang *et al.*, 2010); (Singh and Davidson, 2003) and Debt are not significant. Firm size has a significantly negative relationship with expense ratio.(Florackis, 2008) (Wang *et al.*, 2010) (Nazir and Saita, 2013) also found the same relationship. MAN_OWN also has a significant negative relationship with expense ratio that is consistent with (Singh and Davidson, 2003). It concluded that MAN_OWN does not prove to be considerable restraint to unnecessary discretionary expense which is taken as measure for A-C in research. It revealed that low managerial ownership line up the interests of managers and shareholders by decreasing management incentives for perquisite expenditure, employment of unsatisfactory effort in non maximizing ventures. At some high level of managerial_ownership, although managers apply inadequate efforts, work for personal wellbeing and establish at the cost to other shareholders. Thus there is non-linear association between the two.

INST_OWN also has a significant negative relationship with expense ratio. There is negative relationship between the expense ratio and IND but this is not significant. Singh and Davidson (2003) also found the negative association that is not significant. OWN_CON is found to be negatively associated but not significant. In same variable Florackis in 2008 found the negative relation but that is significant.

Table-6. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
1	.399 ^a	.159	.136	.290202	2.057	6.934	.000

a. Predictors: (Constant), Log of Assets, Non Executive Directors, Ownership Concentration, Ratio of Total Debt to Asset, Duality, Long term debt Ratio, Total Directors, Independent Directors, Managerial Ownership, Salary, Institution Ownership.

b. Dependent Variable: Expense Ratio

Table-7. Panel data fixed effects regressions of governance mechanisms and agency costs– Expense Ratio

	Un standardized Coefficients		Standardized Coefficients	T	Sig	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	1.141	.272		4.198	.000		
Managerial Ownership	-.002	.001	-.132	-1.791	.074	.387	2.583
Ownership Concentration	-1.346E-6	.000	-.010	-.165	.869	.592	1.688
Institution Ownership	-.002	.001	-.207	-2.545	.011	.317	3.156
Total Directors	.012	.008	.077	1.474	.141	.762	1.312
Non Executive Directors	.000	.001	.044	.848	.397	.764	1.310
Independent Directors	.000	.001	-.041	-.773	.440	.754	1.327
Duality	.203	.043	.226	4.720	.000	.914	1.094
Salary	3.030	1.071	.157	2.828	.005	.677	1.477
Debt Ratio	.051	.033	.075	1.576	.116	.916	1.092
Log of Assets	-.102	.027	-.215	-3.739	.000	.634	1.578

a. Dependent Variable: Expense Ratio

Table 6 shows the value of R square that is 0.159 and the value of F Statistic is 6.934 that is significant at 1% level. The R2 implies that the 15.9 percent of the variation in A-C is explained by CG characteristics while taking the Exp ratio as an A-C. The value of Durbin Watson is 2.057 and of VIF also near about to 2 so it means that there is also not any collinearity in this model. The graph shows the normality of data collected.

5. Conclusion & Discussion

The above outcomes are dissimilar with different constructs of agency costs. The relation between governance mechanisms and A-C are not entirely consistent with hypotheses because it is multifaceted and diverse. The results are not same with developed countries like U.S and U.K. the reason is that the security market in Pakistan is immature with several imperfections. The market situation is evolving and varying constantly. These features direct the theoretical analysis to inconsistency empirical test results. Additionally, the governance structure of listed companies in Pakistan is developing steadily. The solutions of A-C problems in Pakistani firms need to develop governance structure as well as the management behavior with the objective of shareholders' wealth maximization. Social and ethical limitations on the agent's behaviors are significant elements that are affecting the CG effectiveness.

Study applies two dependent variables as proxies of A-C, such as asset turnover ratio and sales and general expense ratio. It examines the impact of alternative CG mechanisms such as board characteristics, managerial remuneration, managerial ownership, ownership concentration and debt financing, on A-C and examine their role in mitigating managerial agency problems in the Pakistani market. However, some of these results are not favorable the reason is that CG mechanisms include the rules to bring under control the behaviors of shareholders, board of directors and managers within the firm. External governance mechanisms such as laws and government's regulations also have an effect on the results. Due to change in format of analysis report on non financial sector by SBP, Some values of Year 2010 have also been excluded.

In this study Banks and investment trust companies are not taken in the sample data because the banks have unique ownership structure and investment trust companies have different management structures. These are also excluded from the sample in previous studies.

This research has some limitations. It includes the data only for the last five years (2007-2011), so it is not reliable beyond this time period. This study only focuses on listed companies on KSE 100 Index and does not represent the companies that are not listed on KSE. This sample selection resulted in sample bias.

Based on the findings and limitations of research, some recommendations are made for future research. As we know that the sample selection period is just of five years so, here is a need to include more years of data in order to extend the study. Some control variables like growth, risk and size of the firm should also be included to investigate their role in mitigating A-C. It would also require more research that how to include the external market mechanism and government laws and regulations in to an empirical model, while inspecting the impact of external governance mechanisms on A-C.

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Annexure I

List of Companies Included in the Study

Sr.#	Company Names	Sr.#	Company Names	Sr.#	Company Names
1	Oil & Gas Development company	34	Sui South Gas	67	Soneri Bank Ltd
2	Pak Petroleum	35	Unilever Food XD	68	Indus Dyeing
3	Nestle Pakistan Ltd.	36	Nishat Mills Limited	69	Thal Limited
4	MCB Bank	37	Ibrahim Fibers	70	IGI Insurance Ltd
5	Fauji Fertilizer XD	38	Dawood Hercules XD	71	Attock Cement
6	Habib Bank Limited	39	Millat Tractors	72	Universal insurance co.
7	UniLever Pak XD	40	Pakistan international container terminal ltd	73	Jubilee General Insurance
8	United Bank XD	41	GlaxoSmithKline Pakistan	74	Ghani Glass Ltd
9	Pak Oilfields	42	Bestway Cement	75	Tri-Pack Films
10	National Bank Pak	43	Dream world	76	P.I.A
1	Allied Bank Ltd	44	Arif Habib Co.	77	Bawany Air Products
12	P.T.C.L.A	45	Pak Tobacco XD	78	EFU Life Assurance
13	Engro Corporation	46	Lotte Pak PTA	79	Silk Bank Limited
14	National Foods	47	Jahangir siddiquie and co ltd	80	Siemens Pakistan
15	Fatima Fertilizer	48	Askari Bank	81	Nishat Chun Power
16	Hub Power Co.	49	Shell Pakistan Ltd.	82	Clariant Pak
17	P.S.O. SPOT	50	Abbott Laboratories	83	J.D.W.Sugar
18	Standard Charter Bank	51	Sui North Gas	84	Nishat Power Ltd
19	Lucky Cement	52	EFU General Insurance	85	Pak Services
20	Kot Addu Power	53	Atlas Honda Ltd.	86	Siddiqsons Tin Plate Ltd
21	Fauji Fertilizer Bin	54	Attock Refinery Ltd	87	Pak Reinsurance
22	Colgate Palmolive	55	Faysal Bank	88	Bata (Pak) Limited
23	Attock Petroleum XD	56	Byco Petroleum	89	Feroze 1888 Mills
24	Bank AL-Habib	57	Philip Morris Pak	90	PICIC Gro Fund
25	Rafhan Maize XD	58	AL-Ghazi Tractor	91	Murree Brewery
26	Meezan Bank Ltd	59	Tandlianwala Sugar	92	Security Paper
27	Bank Al-Falah	60	Adamjee Ins	93	Media Times Ltd
28	Indus Motor Company	61	Fauji Cement	94	Al Abbas Cement
29	NIB Bank Limited	62	Mari Gas Company	95	Shifa Int.Hospitals
30	National Refinery	63	Packages Ltd	96	Pakistan Cables
31	D.G.K. Cement	64	K.E.S.C	97	Netsol Technologies
32	ICI Pakistan Ltd	65	Engro Polymer	98	Pace (Pak) Ltd.
33	Habib Metropolitan	66	Pak Suzuki Motor XD	99	Grays of Cambridge
				100	Pak Telephone