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THE EFFECT OF CORPORATE GOVERNANCE ON COST OF CAPITAL IN AGRICULTURE SECTOR OF ASIAN COUNTRIES

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Abstract

This study has determined connection of governance mechanisms with cost of capital based on Agency and Stewardship theories for companies in agriculture sector in 20 Asian countries from 2009-2018 for 363 agricultural firms as agriculture significantly contributes in growth of Asian economies. The WACC variable is selected as a dependent variable, whereas quality of corporate governance practices (QCG) variable has been used as independent variable. The endogeneity of QCG variable was examined through 2SLS model and results depict that variable of QCG significantly and negatively affect the variable of WACC. Moreover, the variables of leverage, ROA, sales growth and stock's volatility have significant positive connection with WACC, whereas, the firm size has significant negative relationship with the WACC. This research contributes to empirical literature by offering the first empirical support for analysis on association of governance systems and WACC for agricultural firms in Asian countries. These results are consistent with suggestions of Agency and stewardship theories and therefore, policy makers need to improve their corporate governance structures for attracting more investors and creditors around the world in agriculture sector.

***Key words*:** *Governance practices, cost of capital, agricultural firms, Asian countries*

INTRODUCTION

This study explores connection of governance mechanisms and cost of capital for Asian agriculture firms. The cost of capital has been measured through WACC because it includes both cost of debt and equity. So, instead of using only equity or debt cost as a proxy for organization's capital cost; it is expected that using WACC will provide more valid results as compared to results by using only cost of equity or debt. Many theories have pointed a connection of governance mechanisms with shareholders' wealth. The empirical literature has given preference to Agency and Stewardship theories in explaining corporate governance association with firms' capital cost [3]. The agency theory argues that stockholders' wealth maximization objective could be accomplished by alignment of managers and shareholders' interests. Conversely, stewardship theory points out that managers implement better corporate governance mechanisms to reflect being the reliable stewards of their controlling assets which results in boosting wealth of stockholders thus indicates the connection of corporate governance with stockholders' wealth. Whereas, the capital cost is a critical element in creation of wealth.

This study observes this matter for Asian agricultural firms due to lesser available literature on this topic for Asian economies and existence of gap in literature for impact of governance mechanisms on organizational performance. So there is a stronger motivation of this study for bridging these literature gaps. The research examined whether improved governance would lower capital cost for Asian agricultural firms of 20 countries from 2009-2018.

This study analyzed connection of governance mechanisms with capital cost along with some control variables. Following are the objectives of this research:

(1)Are there financial benefits for better governance practices in Asian Countries?

(2)Determine whether Better Governance practices Results in Lowering the Cost of Capital.

The rest of the study is organized as following: literature review is described in section 2; research methods is presented in

section 3. Results are discussed in section 4, whereas, the conclusion is provided in section 5.

Literature review

Many researchers have analyzed association of governance activities and capital cost e.g. [8] found that increased managerial ownership results in increasing debt cost at lower levels but reduces debt cost at higher levels. [5] also stated that as purpose of governance practices is decreasing agency costs, they may have an important impact on equity capital cost of the firm; the researchers also described that better quality of company's financial information have negative correlation with equity cost of the business. [14] provided direct evaluation regarding incentives related to disclosure and impact on organizations' capital cost. The authors argued that businesses in industries which require more external financing have more voluntary disclosures in order to differentiate their companies for obtaining external financing at a lower cost. The researchers found that an extended disclosure policies for these corporations results in decreased cost for both debt and equity. [12] determined influence of governance practices on liquidity of equity and described that the organizations with weaker disclosure practices and information transparency have to bear a more cost for liquidity of equity.

[1] analyzed impact of board's size, independent audit committee, managerial ownership, governance score and board independence on equity cost in Pakistan by utilizing data of 2003 to 2007 for 114 KSE firms. The authors used correlation matrix, OLS and fixed effects models for testing this association. The results have shown that board size and managerial ownership significantly and negatively affect on equity cost, whereas, independent auditors, board and governance score have positively affect equity cost in Pakistan. [15] observed interactive influence of financial and legal developments at country level, and governance attributes at organizational level on cost of equity by utilizing a broad sample of 7,380 observations in 22 developed economies for period of 2003 to 2007. The authors demonstrated that governance attributes at firm level have an effect on equity cost just in Common Law nations with higher degree of financial developments.

Furthermore, [10] studied Canadian economy for period of 2002 to 2005 and tested governance levels with corresponding WACC and discovered a strong association among the variables. They measured governance by report on business (ROB) index and suggested that improved governance practices results in decreasing WACC for Canadian businesses. The ROB index comprises large number of governance factors which are considered to be extremely important for the effectiveness of governance practices. It includes board composition, board independence assessment, and also three committees namely nomination, audit and remuneration. [6] conducted same kind of research and found that ownership concentration would result in increasing or decreasing the debt cost. [16] determined influence of governance practices on equity cost and financial decisions for listed companies in Tehran from 2007-2011. The results depicted that the variables of governance practices significantly and positively affect cost of equity, debt and WACC. [27] analyzed 22 countries data and suggested that governance practices at firm level can substitute for protection at country level. They also found that cost of equity has been lesser for organizations in countries having stronger legal systems. These findings are similar to past research that debt and equity cost are lesser for businesses having better governance practices. [22] examined association of governance mechanisms with business performance in India by utilizing a sample of larger companies over 10 years. This study showed that more insider ownership, independent board directors and existence of institutional blockholders reduced the company's perceived risk, thus directing the investors to require lesser return on invested capital. This study highlighted vital role of governance practices in producing value for stockholders by diminishing external financing cost.

[11] examined association of board independence and cost of debt for 2002 to 2006 and reported that independent board

reduces debt cost in presence of stronger credit situations or lower leverage, whereas, it raises debt cost in presence of poor credit situations or higher leverage. They also documented that independent board directors set organizational policies which enhance business risk so independent board directors perform in better interest of stockholders and are more costly for bondholders with increase of agency conflicts between these two groups. [20] investigated relation of governance index and capital cost for the 110 firms listed on Tehran stock market during 2009 to 2013 through the multivariate regression model. In order to estimate effect of governance index with capital cost, the influence of other related variables have been controlled. The researchers have shown that a negative and significant correlation exist between governance index and capital cost. [25] investigated the degree to which governance mechanisms implemented by listed companies in Latin America influence their equity capital cost. The findings of research showed a negative connection of governance quality and equity cost. Particularly, the "Disclosure" variable was most influential in affecting the equity capital cost. [17] analyzed the Australian economy for the period of 1994 to 2003 and reported that more insider ownership, smaller independent boards and presence of more institutional blockholders results in lowering overall capital cost. Other researchers focused on both debt and equity costs.

[2] indicated that larger boards enhances firm value, whereas, the effect of other governance characteristics changes with state of economic conditions for companies in UK. [7] stated that separation of CEO and board chairman roles improves financial performance for businesses in Tanzania. [4] found that board characteristics does significantly affect firm value in Ghana.

We can conclude from the above mentioned literature that very limited research has been performed regarding relation of governance mechanisms with organizations' capital cost for Asian economies generally and Asian agricultural firms particularly. To the best of author's information, very few studies in Asia has determined the association of governance with capital cost, whereas, there is no study which investigated the association of governance with capital cost for Asian agricultural firms. The empirical literature also depicted mixed results as few researchers found positive, whereas, others found a negative association for governance mechanisms and capital cost. Therefore, this study aimed to determine correlation of governance mechanisms with capital cost for Asian businesses for 2009 to 2018. As investors consider that firms with improved governance practices have lesser risk, so they will perceive that investment in those companies would be exposed to decreased risk. Therefore, the investors will demand lesser rate of return for these organizations. Consequently, the following hypothesis is formulated:

H1: Better Governance Practices Results in Lowering the Cost of Capital.

MATERIALS AND METHODS

Based on Agency and Stewardship theories, the theoretical framework of this research has been depicted in Fig. 1 as follows:

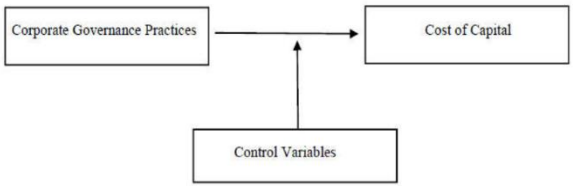

Fig. 1. The Theoretical Framework of the Study
Source: Own Design.

The framework and empirical models for this research has been discussed in this section. The methods employed for determining the relationship between governance mechanisms with capital cost in Asian firms has also presented, whereas, the conceptual framework is described in Fig. 2.

The governance mechanisms variables for Asian firms are depicted on left side which include: Quality of Corporate Governance (QCG), Board Independence (BI), Ownership Concentration (OWN), Audit Committee Independence (AI) and CEO Duality (DUAL). The proxy for organizations' capital cost is

specified on right hand side that is WACC which is measured through combination of equity and debt costs. The control variables include: Firm Leverage (LEV), Firm Size (SIZE), ROA, Sales Growth (SALESGROW) and Firm's leverage (LEV).

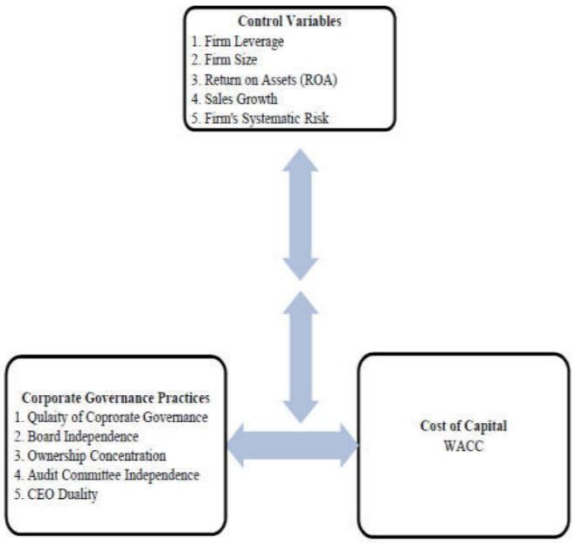

Fig. 2. Potential Association of Characteristics for Governance Practices and Cost of Capital
Source: Own Design.

Data and Selection of Sample

This study employed quantitative technique for examining connection between governance mechanisms and capital cost for Asian businesses. This study have a sample of agriculture firms in 20 Asian economies covering the time period of 2009-2018 and excluded the financial sector firms and the businesses not having complete dataset. The dataset is gathered from audited reports, concerned stock exchanges and websites of concerned firms. A final sample of 363 nonfinancial firms in agriculture sector is used as dataset of this study for representation of agricultural sector in Asian economies.

Variables

According to [19], WACC includes the organizations debt and equity costs, tax rate, capital structure, amount of equity and debt as shown in balance sheet.

The following equation can be formed to calculate WACC:

$$WACC = \frac{Equity}{Total\ Assets} * R_e + \frac{Debt}{Total\ Assets} * R_d * (1 - T_c) \dots (1)$$

where:

Re denotes the equity cost and
Rd signifies the debt cost.

Calculating equity cost can be carried out in many ways but there are most accepted methods which include CAPM [18]; [21] [26], Three Factor Model [13] and Dividend Discount Model [23]. Even though it is yet indefinite about which technique is most effective to use [23], the common method which was utilized in previous studies is CAPM e.g. [10]. The model for CAPM can be described as follows:

$$R_e = R_f + \beta(R_m - R_f) \dots\dots\dots (2)$$

where:
Rf is risk free return,
β is beta, the variability of organization with respect to the overall market, and
Rm is market rate.
(Rm − Rf) is risk premium.

The risk free rate will be calculated based on 10 year Government Treasury bond which is supported by [24]. The coefficient of beta will be calculated manually based on stock price returns as follows:

$$Beta = \frac{COV\,(R_m\,;R_e)}{Var\,(R_m)} \dots\dots\dots\dots (3)$$

This research employs the CAPM model as it the most widely used method employed in the empirical research to calculate equity cost. The techniques of calculating debt cost are much complex as compared to equity cost. The debt cost represents payments a business should pay against debts. The debt cost is calculated as rate on a risk free bond. The commonly used measure for debt cost is yield spread as indicated by the prior studies, which represents average debt yield to maturity above risk free rate e.g. [9]; [11]; [23]. The debt cost can also be measured as interest payments divided by total debt outstanding. This kind of methodology has been applied by [14] and [27]. This research calculates debt cost as annual interest expense divided by debt.

The independent variables employed in this research and the methods of their estimation have been presented in Table 1 as follows:

Table 1. Explanation of Variables

Variables	**Method of Measurement**
Dependent	
WACC	Weighted Average Cost of Capital
Independent	
QCG	Quality of Corporate Governance calculated as: QCG = f (BI, AI, OWN & DUAL)
BI	% of independent directors to total directors
OWN	% of five biggest stockholders to total stock
AI	% of independent directors to total audit committee's directors
DUAL	Value of 1 for CEO duality or zero, otherwise
SIZE	Total assets' natural log
VOLA	Stock Prices' volatility for one year
LEV	% of total debt with total assets
ROA	Net income divided by the total assets
SALESGROW	Log of sales growth

Source: Own Design.

Research Methodology

This study has estimated panel regression models. First of all, the association of the QCG variable with WACC variable has been determined and then robustness of results has been also tested by regressing WACC variable against individual corporate governance variables. The 2SLS Regression has been used for checking problem of endogeneity for independent variables. As the post estimation tests for 2SLS depict that endogeneity issue does exist in data of this research, therefore the results for 2SLS models have been reported accordingly. As the data used in this study comprises of twenty different countries which may vary based on country specific characteristics. Therefore, for controlling country specific effects, twenty dummy variables namely D1, D2, D3……..D20 have been included in 2SLS model. The base regression model for testing this association is stated below.

$$WACC_{i,t} = \beta 0 + \beta 1\ QCG + \beta 2\ LEV + \beta 3\ SIZE + \beta 4\ ROA + \beta 5\ SALEGROW + \beta 6\ VOL + Ut \ldots\ldots\ldots (4)$$

RESULTS AND DISCUSSIONS

In order to examine endogeneity issue in QCG, the 2SLS regression is employed.

Table 2. The 2SLS Regression Model

2 SLS Regression Model		
WACC	**Coef.**	**Std. Err.**
Panel I		
QCG	-0.217***	0.194
LEV	5.585***	0.495
SIZE	-0.398***	0.050
ROA	0.189***	0.011
SALESGROW	0.446***	0.153
VOLA	2.430***	0.196
D1	-3.209**	1.059
D2	-1.689	2.005
D3	-1.321	1.259
D4	-1.345	2.135
D5	-1.653	1.149
D6	-2.349	2.005
D7	-3.237	4.292
D8	0.476	4.495
D9	0.236	1.321
D10	0.479	2.654
D11	0.742	1.987
D12	0.136	2.234
D13	2.635	1.356
D14	2.852	2.114
D15	-2.613	1.163
D16	0.569	2.254
D17	0.472	1.654
D18	0.316	2.786
D19	0.326	1.316
D20	0.749	2.223
_cons	13.360	3.629
Instrumented: QCG		
Instruments: LEV SIZE ROA SALESGROW VOLA D1 D2 …….. D19 D20 BSIZE		
Panel II		
BI	-8.605***	2.333
OWN	-1.179**	0.490
AI	-0.737	0.607
Dual	-0.612*	0.352
LEV	4.676***	0.495
SIZE	-0.486***	0.250
ROA	0.243***	0.021
SALESGROW	0.557***	0.163
VOLA	2.540***	0.186
_cons	7.743	2.336
Instrumented: BI		
Instruments: OWN AI Dual LEV SIZE SALESGROW VOLA BSIZE		
*****Significant at p-value <1%,** ****Significant at pvalue <5%,** ***Significant at p-value <10%**		

Source: Own Design.

The QCG is considered as endogenous, whereas, the variable of board size is taken as instrumental variable and results are described in Table 2.

The panel I of Table 2 depicts that the variable of QCG negatively and significantly affect the WACC which means that improved quality of governance mechanisms results in decreased capital cost which is similar to results of [20]. Thus, based on these finding, this study concludes that better governance mechanisms results in lowering the capital cost for Asian agricultural firms which is in accordance to recommendations of agency and stewardship theories. Moreover, the control variables of leverage, ROA, SALESGROW and VOLA significantly and positively influence the WACC variable which means that higher leverage, ROA, sales growth and volatility results in higher capital cost for Asian businesses.

Furthermore, the variable of size significantly and negatively affects the WACC variable which means that agricultural businesses have lesser capital cost in Asian countries.

The results also depict that all the country dummy variables which controlled for country specific characteristics have insignificant values except for D1 which represent Japanese economy has significant and negative value. It means that cost of capital for only Japan is significantly different from other economies, whereas, the capital cost difference for all other countries are insignificant. Based on results for country specific dummy variables, this research concludes that findings of this study are valid and country specific differences in data have insignificant impact on findings of this study.

Robustness of Regression Results:

After accepting the hypothesis 1, the robustness of regression results has been checked by regressing the individual corporate governance factors and control variables against WACC variable and findings are depicted in panel II of Table 2. The panel II depicts that variables of BI, OWN, DUAL and SIZE have negative and significant impact on WACC for Asian countries which means that more independence of boards, ownership concentration, existence of CEO duality and larger size of firms will result in decreased WACC for Asian multinationals. These findings are similar to [9]; [10]; [11]; [22] and [25]. The results have also found that the variable of audit committee independence has insignificant association with WACC. The results also show that the variables of leverage, ROA, sales growth and stock price volatility positively affect WACC for Asian multinational companies. So, this study concludes that improved governance results in lesser cost of capital for Asian multinationals which is in accordance with recommendations of agency and stewardship theories. Thus, based on these results, the decision regarding acceptance of hypothesis 1 has been verified and it is being concluded that improvement in corporate governance practices yields benefits to Asian multinational companies in terms of lessening cost of capital.

For testing the endogeneity of board independence, the Durbin and Wu-Hausman techniques are employed which have p-value of 0.0040 and 0.0040 respectively. Therefore, the alternate hypothesis that variables are not exogenous is accepted. This research concludes that board independence has endogeneity issue and 2SLS regression is more suitable for analyses. The First Stage Regression Summary Statistics is used and finding show that the eigenvalue value is 187.211 which is greater than all the critical values, so the alternate hypothesis that instrumental variables are not weak is accepted.

Then, the test of Overidentifying restrictions is employed. The Sargan Test and Basmann Test have p-values of 0.2278 and 0.2485 respectively, so the null hypothesis that instruments set are valid and model has correct specification is accepted.

CONCLUSIONS

The 2SLS model is used in this study and the QCG variable is considered as endogenous variable, whereas, board size is taken as the instrumental variable and the results depict that the variable of QCG significantly and negatively affect cost of capital for Asian multinationals. Moreover, the findings for

individual corporate governance variables also show that ownership concentration, independent boards and CEO duality have negative correlation with WACC. Specifically, the implementation of better corporate governance mechanisms results in lessening the WACC which ultimately decreases the overall capital cost. These findings are significant for the policy makers and provide evidence that investors and creditors around the world assign higher weight for better governance while taking decisions to invest their capital in terms of equity or debt. This significant also points out that investors and creditors around the world would be more willing to invest in those companies which depict lesser capital cost.

Thus, it is extremely important for the companies to strengthen their corporate governance structures to obtain equity and debt financing at lesser cost. The results have showed that the control variables of leverage, firm size, ROA, sales growth and volatility were found significantly affecting capital cost. The potential researchers can extend this research as follows:

Firstly, this study focused on agricultural firms only, whereas, the future research can also examine this relationship in other sectors. Secondly, conducting the same investigations in other economies would assist in clarifying the precise role of governance practices on capital cost. Therefore, the association of governance practices with capital cost should be determined in other economies also. Thirdly, country wise analyses should be performed. Fourthly, utilization of more specific periods in future research would assist in developing new insights of governance practices. By focusing on the crisis periods and evaluating the board performance and comparing the board performance with other times periods can clarify the board dimensions in a better way.

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