

# Institutional Ownership and Cost of Capital: An International Study

Aws AlHares<sup>1,2</sup>, Gerard Dominic<sup>2</sup>, Tarek Abu-Asi<sup>2</sup>

<sup>1</sup>Department of Accountancy and Finance, Business School, University of Huddersfield, Huddersfield, UK

<sup>2</sup>School of Business Management & Information Technology, College of the North Atlantic in Qatar, Doha, Qatar

Email: aalhares@yahoo.co.uk

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## Abstract

This study investigates the impact of Institutional Ownership on Cost of Capital. A panel data of 200 companies from FORBES Global 2000 Leading Companies between 2010 and 2019 were used. The ordinary least square multiple regression analysis technique is used to examine the relationships. The findings are robust to alternative measures and endogeneities. The results show that institutional ownership is statistically positively related to cost of capital. This study extends, as well as contributes to the extant corporate governance literature by offering new evidence on the effect of institutional ownership on cost of capital. The findings will help regulators and policy-makers in evaluating the adequacy of the current corporate governance reforms to prevent management misconduct and scandals.

## Keywords

Institutional Ownership, Cost of Capital, Institution Theory, Ownership Structure, FORBES

## 1. Introduction

Researchers have shown great interest in the subject of corporate governance (CG) and its possible impact on firms. Consequently, several studies have examined the association between (CG) and firm value (AlHares et al., 2018a; Abdelhak et al., 2019; Gompers et al., 2003; Renders et al., 2010; Kumar & Zattoni, 2013); between (CG) and earnings management (Xie, Davidson, & DaDalt, 2003; AlHares, 2020a); between (CG) and compensation (Kaplan, 2012), and between (CG) and voluntary disclosure (Eng & Mak, 2003; AlHares & Ntim, 2017). However, by contrast, studies examining the extent to which institutional ownership drives cost of capital (COC) are rare. Consequently, this study seeks to

contribute to the extant literature by addressing the limitations of previous studies via an empirical examination of the effect of institutional ownership on (*COC*).

Cost of capital is seen as critical to the performance of a firm. If the cost of borrowing funds is high, this will impact firm performance. This concept is also related to other country characteristics. A country with a strong and effective legal system will have rules and regulations in place to protect the rights of investors. For example, a legal system that requires companies to provide their shareholders with timely information and that has rules for enforcing contracts would be considered good for investors. Companies in countries with this type of legal system would not have to engage in as much monitoring as companies in countries where this information is missing. Therefore, the cost of capital in countries with good legal systems would be relatively low (Hail & Leuz, 2006; AlHares et al., 2019; Li & Mohanram, 2014; Hou et al., 2012).

According to these researchers, there are generally lower costs of capital in countries with strong securities regulation, and where there are legal mechanisms for enforcing the law (Hail & Leuz, 2006; AlHares, 2020b). The rationale here is that there are mechanisms in place that would ensure that shareholders' rights are to some degree protected in case of default. Investors would rather invest in countries where the rights of investors are prioritised. La Porta et al. (2002) examined the equity valuation of firms with different legal systems and discovered that firms with strong and effective legal systems tend to have greater equity valuations, and more interest from investors.

When investors decide to invest in a company, they consider their required return and base this on the systematic risk of the company. Mitton (2002) found that companies with weak corporate governance performed poorly during economic downturns, and this was usually associated with a greater cost of capital. This was because investors, realising the additional risk involved in investing in companies with poor performance, required a premium on their investment. It was also the case that with poor governance, shareholders would also have to engage in more monitoring in order to protect their interests. The rationale for this poor performance and greater cost of capital can be attributed to the fact that with poor governance, there was usually too little monitoring of management. Consequently, management was more likely to borrow more funds to support new projects (AlHares et al., 2018b). Such action by management would often expose the company to greater risk, increasing the cost of capital.

This study therefore uses (*COC*) as a measure of firm performance. (*CG*) is represented by institutional ownership. It is expected that this study will make a notable contribution to this field by offering information to countries that are not realising the level of investment that they require, and could provide suggestions that would help them in making changes and implementing mechanisms that would establish good (*CG*), thereby attracting more capital based on companies' performance.

## 2. Literature Review and Hypotheses

Institutional theory looks at the relationship between organisations and the societal environment in which they exist. More specifically, institutional theory examines the stability and survival of the organisation, and highlights institutional norms and rules that the organisation can incorporate in order to promote its longevity (Chen & Roberts, 2010).

Westphal and Zajac (2014) point to macro and micro levels of analysis, and show how these are linked through the behaviour of individual organisation elites, which occur “not in a social vacuum, but rather in a socially situated context and by individuals whose interpretation of the context is itself socially constructed or constituted” (p. 608). In other words, organisation leaders are influenced by the social relationships, networks and institutions in which they operate, and their behaviour is influenced by their experience and socialisation. Therefore, leaders of elite organisations tend to be influenced by their social interaction. For example, these authors point out that through ingratiation, social influence is wielded. Also, managers and directors can engage in ingratiation behavior towards their peers, and this could cause their peers to support the recommendations made by these managers and directors. But this is seen as weakening corporate governance, for as these authors maintain, for this could weaken board independence and compensation paid to directors (Westphal & Zajac, 2014: p. 611). It was also shown that leaders may distance themselves from other leaders that violate existing norms of corporate governance; for example, supporting measures to increase the independence of the board from management, or dismissing the CEO (Westphal & Zajac, 2014). Leaders that are distanced are often excluded from informal gatherings, while their advice is solicited less frequently, and they may be actually ostracised (Westphal & Zajac, 2014).

A review of studies on the relationship between institutional ownership and cost of capital shows that there is no statistically positive relationship. For example, it was found that companies with higher levels of institutional ownership in South Africa were more likely to disclose voluntarily as part of their corporate governance (AlHares et al., 2018c). Also, in Germany, the corporate governance system was shown to be very different from other governance systems, for example the Anglo-American governance system (AlHares, 2017).

A firm’s level of risk was seen to affect the firm’s cost of credit. This was likely to reveal yearly changes taking place in the firm’s governance, while showing that there was not much interference from outside factors that would affect the future profitability of the firm.

To support this, Ashbaugh-Skaife et al. (2004) show a significant association between a firm’s governance and the cost of equity capital that firms experience. These researchers found that concentrated ownership, measured by the number of shares that held by institutions, as well as the number of block hold-

ers with 5% or more of stock in the firm, influence the cost of equity for a firm (Ashbaugh-Skaife et al., 2004).

Further, Pham et al. (2012) analyse the relationship between governance and the cost of capital. In examining a panel data set consisting of data for Australian firms on governance and cost of capital for a ten-year period, Pham et al. (2012) discovered that when firms show that they have stronger governance features, for example board independence, some institutional block holders, and some insider ownership, this contributes to a decline in the cost of capital, as well as in higher value for the firm. They also find that cost of capital decreases with higher insider ownership, but this was only observed up to a certain level of ownership (Pham et al., 2012).

Several studies emphasise the fact that strong governance has the effect of limiting divergence of cash flows. In contrast, Pham et al. (2012) argue that strong governance characteristics lead to a reduction in the cost of capital. The explanation for this is that investors recognise that their firm's level of risk influences its cost of capital (Pham et al., 2012). It was shown that several potential risks exist when a firm does not put enough emphasis on strengthening its corporate governance. For example, it is possible that insiders may decide not to pursue value maximising strategies, as external monitoring may become more difficult. Instead, insiders may opt for strategies that further entrench their positions. Also, insiders may engage in excessive borrowing and expansion aimed at empire building, which are typically self-serving and which may expose the firm to risks in the marketplace. All of these factors contribute to higher costs of capital.

Given the evidence on institutional ownership, both the null and alternate hypotheses are tested. The respective null hypothesis to be tested in this study is:

***H1: There is no statistically significant relationship between institutional ownership and (COC)***

### 3. Research Methodology

The sampled firms used are drawn from listed firms in the World's Biggest Public Companies listing, FORBES Global 2000 Leading Companies. The sample is made up of 200 firms that were taken from ten, or 29.4%, of the 34 OECD countries. The firms represent both the Anglo-American tradition, including companies from Australia, Canada, Ireland, the UK and the US, and the Continental European tradition, which includes companies from France, Germany, Italy, Japan and Spain. These companies are drawn from ten industries, namely, basic materials, consumer goods, consumer services, financials, health care, industrials, oil and gas, technology, telecommunications and utilities. The period of focus is 2010 to 2019, resulting in 2000 firm-year observations. The study looks at how (CGM) impact (COC) of these firms.

The data and sources collected from these firms between 2010 and 2019 are drawn from the 200 firms from the FORBES 2000 list, and are also listed on the stock exchanges of the respective countries. It is important to examine the com-

panies' annual reports, and only companies with at least seven consecutive years of annual reports are used. The assumption is that companies that are accountable to their stakeholders and that have good business practices will maintain their annual reports; the rationale for this is that good, solid companies would have to report their business practices to their constituents. The rationale for using the ten-year period is that it allows us to look at observations of (*CG*) changes over time.

**Table 1** represents the summary of variables and measures used in this study. The study uses (*CG*) data, financial data, country-level data and firm-level data. These data sources are critical, as the study focuses on capital cost for all the sampled firms. The study obtains the annual reports of all the sampled firms from the Perfect Information Database and the company websites.

It is important to point out that the (*COC*) to a company includes not only the cost of borrowing new capital funds, but also the cost of equity. The cost of borrowing funds is based on what lenders demand from companies. The cost of equity is the percentage that a company's owners would require to invest their money in the company. Therefore, (*COC*) must be seen as involving the costs that both lenders and owners demand. This can be appreciated by looking at how publicly owned companies raise their capital. They either borrow money directly from a lender or they sell shares in the company. Therefore, the (*COC*) would have to be based on the cost of debt as well as the cost of equity.

Therefore, when companies set out to determine the (*COC*), they must develop a measure that would allow them to capture cost of equity as well as the cost of debt. The cost of equity is sometimes inferred by using the discount rate to determine the present value of the dividends expected (Gode & Mohanram, 2003). One way of measuring the value of equity is by using the Capital Asset Pricing Model (CAPM), which is really the rate of return based on risk (Gode & Mohanram, 2003). But as these authors point out, using the CAPM as a measure based on risk premium is weak, as expected returns often differ markedly from actual returns (Gode & Mohanram, 2003).

Another approach is what is referred to as the ex-ante approach, where one infers risk from looking at the expected dividends in terms of the current price. As these authors contend, future dividends are not easily observable, as analysts estimate earnings based on periods, and do not have the whole earnings stream on which to base their analysis (Gode & Mohanram, 2003). Easton (2004) puts forward a method of estimating the expected rate of return on equity capital, which was shown to be important in determining the (*COC*). According to this author, two methods that have been used to evaluate rate of return on equity capital, namely, the price-earnings (PE) ratio and the price-earnings ratio divided by the short-term earnings rate (PEG ratio), are not accurate because they fail to capture the long-term picture. Easton (2004) therefore promotes the Ohlson-Juettner model. The independent variables used in this study institutional ownership.

**Table 1.** Summary of variables and measures.

<b>Corporate Governance Variable (Independent Variables)</b>	
<i>IO</i>	The ratio of total number of ordinary shares held by institutional shareholders with at least 5%, to the total number of ordinary shares
<b>Cost of Capital (Dependent Variables)</b>	
<i>COC</i>	The average of the 2 metrics: Modified Price-Earning Growth Model and Modified Economy-Wide Growth Model
<b>Control Variables</b>	
<i>SG</i>	The ratio of current year's sales minus previous year's sales, all divided by previous year's sales
<i>FS</i>	Natural logarithm of the book value of total assets
<i>LVG</i>	The ratio of total debt to total assets
<i>CORR IDX</i>	The misuse of public power for private benefit
<i>INF</i>	The rate at which the general level of prices for goods and services is rising
<i>GDPC</i>	Gross domestic product (GDP) divided by number of people in the country
<i>Y</i>	A dummy variable for each year of the ten years from 2010-2019, 2010 (DU 10), 2019 (DU19)

After validating all the assumption of multivariate regression, the following multivariate ordinary least square (*OLS*) regression model is used

$$COC_{it} = \alpha_0 + \beta_1 IO_{it} + \sum_{i=1}^n \beta_i FCONTROLS_{it} + \sum_{i=1}^n \beta_i CCONTROLS_{it} + \varepsilon_{it}$$

#### 4. Research Results Descriptive Analysis and Bivariate Correlations

Institutional ownership shows that there are variations in the mean and the standard deviation in the overall study period. **Table 2**, for example, while the average is (0.165), the standard deviation is (0.119). Skewness is (2.066) and kurtosis is (7.404). The minimum for the overall period is (0.0500) and the maximum is (1.057360).

The issue of institutional ownership was seen as important, as some institutions invest only in certain companies. These institutional owners have a fiduciary responsibility to their investors to engage with firms that provide good or reasonable investment. Institutional investors are encouraged not to invest in firms which do not pay dividends (Grinstein & Michaely, 2005). Companies that are considered good, sound investment choices pay dividends. Therefore, as institutional owners are seen as having a positive impact on management, as they determine the extent to which management is monitored, in order to lower risk (Grinstein & Michaely, 2005). Institutional theory is relevant for explaining what is happening here, as it promotes greater monitoring of management to ensure that shareholders' rights are properly managed and protected.

**Table 2.** Summary descriptive statistics of the dependent, independent and control variables for all sampled firms.

Variables	Mean	Median	STD	Minimum	Maximum
<b>Panel A: Independent (Corporate governance) variable based on all firms year observations</b>					
<b>IO</b>	0.167	0.1275	0.122	0.0500	1.000
<b>Panel B: Dependent Variables</b>					
<b>COC</b>	0.167	0.152	0.271	0.012487	2.131678
<b>Panel C: Control Variables</b>					
<b>SG</b>	0.0797	0.0453	0.1796	-0.4341	2.4190
<b>FS</b>	4.2747	4.2135	0.6193	2.4738	6.1257
<b>LVG</b>	0.6135	0.6253	0.1786	0.0263	1.2571
<b>CORR IDX</b>	1.871	1.893	0.087	1.61	1.98
<b>INFL</b>	-1.621	-1.67	0.650	-2.73	0.0
<b>GDPG</b>	4.968	4.88	0.080	4.462	4.94

Our hypothesis examines the relation between institutional ownership and cost of capital, stating: “There is no statistically significant relationship between institutional membership and cost of capital”. The findings in **Table 3** show that there is a significance relationship between institutional ownership and cost of capital. In fact, there exist instances of statistically positive relationships between institutional ownership and cost of capital. The relation for all firm years shows a significant positive relationship to 10% with (2.532\*\*).

Previous studies for the most part show no statistically positive relationship between institutional owners and cost of capital. The explanation is that companies with higher levels of institutional ownership tend to disclose voluntarily. In South Africa, this contributed to better corporate governance and lower cost of capital (AlHares, 2019). In the Continental tradition, as in Germany, where there is a two-tiered board, it was found that banks had much control over firms, more than was found between traditional lenders and borrowers (Elston & Goldberg, 2003). This control included control over shareholders’ voting rights, which were greatly supervised the firms (Elston & Goldberg, 2003). With representatives from the banks sitting on the supervisory level of the board and proxy voting rules, and with the different country rules, it is evident that cost of capital would depend on the rules governing borrowing and ending in the different countries. But in most Anglo settings, firms demonstrating good governance rules usually receive a positive cost of capital rating (Pham et al., 2012). But when institutional ownership increases, the cost of capital will also increase. The findings of this study show that there is a statistically significant positive relationship between institutional ownership and cost of capital, while other studies have shown that cost of capital decreases with increased institutional ownership.

**Table 3.** OLS regression results of corporate governance mechanisms on cost of capital.

	Dependent Variable	
	COC	VIF
Adjusted $R^2$	31.1%	-
Standard Error	0.191	-
Durbin-Watson	1.183	-
F-Value	1.183***	-
No. of Observations	2000	-
Constant	-2.791***	-
<b>Independent Variables</b>		
IO	2.532**	1.363
<b>Control Variables</b>		
Sales Growth	0.685	1.094
Firm Size	1.935*	2.587
Leverage	0.535	1.404
Corruption Index	4.692***	1.298
Inflation	-0.476	1.255
GDP Per Capita	-2.361**	1.312

Notes: coefficients are in front of parenthesis. \*\*\*, \*\* and \* denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, year 2013 are excluded from the regression analyses. It is used as base year, respectively, for purposes of comparison.

**Table 4** presents the correlation matrix (including both Person's parametric and Spearman's non-parametric) for the variables to test multicollinearities among variables. The direction and the magnitude of coefficients shows in correlation matrices are generally similar, indicating that any non-normality may not pose a statistical problem. Additionally, the bivariate correlations among variables used are relatively weak, indicating non-existence of serious multicollinearity problems.

## 5. Robustness Check

To ascertain the robustness of the study's findings, three additional tests have been carried out. To test for existence of any possible endogeneity, fixed effect model was estimated to address potential unobserved firm-level heterogeneity that (*OLS*) regression model may fail to control for (AlHares et al., 2020; Elamer et al., 2018). Therefore, the model to be assessed is identified as:

$$COC_{it} = \alpha_0 + \beta_1 IO_{it} + \sum_{i=1}^n \beta_i FCONTROLS_{it} + \sum_{i=1}^n \beta_i CCONTROLS_{it} + \delta_{it} + \varepsilon_{it} \quad (2)$$

The results for model 1 are reported in **Table 5** and the results are essentially similar to those contained in **Table 3**. The findings are robust to endogeneity problems that may arise from omitted factors.



**Table 4.** Pearson's and Spearman's correlation matrices of the variables.

Variable	<i>IO</i>	<i>SG</i>	<i>FS</i>	<i>LVG</i>	<i>CORR IDX</i>	<i>INFL</i>	<i>GDPG</i>
<i>IO</i>	1	0.0171	-0.041	-0.009	-0.037	-0.058	-0.043
<i>SG</i>	0.032	1	-0.117**	-0.091**	0.017	0.142**	0.615**
<i>FS</i>	-0.031	-0.117***	1	0.215**	0.015	0.015	-0.047
<i>LVG</i>	0.000	0.102**	0.197**	1	-0.168**	0.215**	-0.217**
<i>CORR IDX</i>	0.048	0.038	-0.061	0.199**	1	0.142**	0.615**
<i>INFL</i>	-0.055	-0.139**	-0.016	-0.037	-0.185**	1	-0.058
<i>GDPG</i>	-0.026	0.056	-0.069*	-0.228***	0.669**	-0.042	1

**Table 5.** Sensitivity of corporate governance mechanisms on cost of capital.

	Dependent Variable		
	Fixed Effect	2-Stage Least Squares	Lagged-Effect
Adjusted $R^2$	67.2%	31.2%	45.9%
Standard Error	0.132	0.192	0.190
Durbin-Watson	2.06	1.182	1.201
F-Value	9.688***	14.308***	22.615***
No. of Observations	2000	2000	2000
Constant	-4.383***	-0.178	2.574**
	Independent Variable		
<i>IO</i>	0.775	0.311	1.342
<b>Control Variables</b>			
<i>Sales Growth</i>	0.838	-0.759	-0.092
<i>Firm Size</i>	-1.23	1.313	2.895***
<i>Leverage</i>	1.458	-0.208	1.116
<i>Corruption Index</i>	-0.617	1.996**	5.231***
<i>Inflation</i>	-2.694***	-0.341	-1.688*
<i>GDP Per Capita</i>	-0.526*	-0.624	-1.714*

As in line with suggestions of AlHares & Ntim, 2017, the two-stage least squares and lagged-effect tests are used in order to correlate the errors that may occur in OLS regression and to fitting panel data model. The results stay almost the same as the results provided previously in Table 5, suggesting that our results are largely robust to endogeneity issues.

## 6. Discussion and Conclusions

This study reveals a statistically positive and significant relationship between in-

stitutional ownership and cost of capital. The findings reveal that firms with institutional owners tend to invest in firms with strong corporate governance, and that firms with strong corporate governance often have lower costs of capital. In other words, firms with institutional owners usually have various elements of corporate governance, including board independence, and also have strong financial performance. These firms also pay good dividends. More institutional owners lead to a decline in costs of capital over time.

These findings are in line with previous studies. In one study, over a period of ten years, firms were seen to exhibit strong governance mechanisms, in the form of board independence, and those with institutional ownership also revealed that costs of capital declined over time, while these companies increased their value; however, this positive relationship was only applicable to a certain level of institutional ownership (Pham et al., 2012). But this researcher noted that firms had to invest in improving their corporate structure, as failure to do so could lead to risks (Pham et al., 2012).

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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## Appendix: Computing Implied Cost of Capital

The implied cost of equity is computed as the average of the two commonly used metrics,  $ICC_{GM}$  and  $ICC_{PEG}$ .

ICC based on the OJ Model:  $ICC_{GM}$  and  $ICC_{PEG}$

Ohlson and Juettner-Nauroth (2005) show ICC can be expressed as:

$$r_e = A + \sqrt{A^2 + \frac{eps_1}{P_0}(g_2 - (\gamma - 1))}$$

where  $A = \frac{1}{2} \left( (\gamma - 1) + \frac{dps_1}{P_0} \right)$  and  $g_2 = \frac{eps_2 - eps_1}{eps_1}$

Gode & Mohanram (2003) make the following assumptions. They set  $(\gamma - 1)$  to  $r_f - 3\%$  where  $r_f$  is the risk free rate.

Additionally,  $ICC_{PEG}$  computed as a simplified version of the OJ model that ignores dividends as:

$$ICC_{PEG} = \sqrt{\frac{g_2}{(PRICE/eps_1)}}$$

where  $g_2$  is defined as above.