

Effect of Executive Ownership on the Relationship between Agency Cost and Equity Mispricing

Faiq Mahmood

Assistant Professor, Lyallpur Business School, Govt. College University, Faisalabad, Punjab, Pakistan.

Amir Inam Bhutta

Assistant Professor, Lyallpur Business School, Govt. College University, Faisalabad, Punjab, Pakistan.

Muhammad Usman

Assistant Professor, Department of Management Sciences, University of Gujrat, Punjab, Pakistan.
Email: drusman@uog.edu.pk

Abstract

The purpose of the current work is to investigate the influence of agency cost on equity mispricing for the firms listed on Pakistan Stock Exchange during the period from 2008 to 2016. Agency cost is estimated by asset utilization ratio, mispricing is computed by book- to -market ratio and some firms' characteristic such as size, profitability and leverage are taken as control variables. Balanced panel method is used to estimate the results. The sample is divided into two parts on the basis of stock mispricing; undervalued and overvalued firms. The influence of agency costs is then separately examined on both sub-samples. Moreover, the effect of managerial ownership on the relationship between agency cost and mispricing is investigated. Results show that agency cost is positively linked with equity mispricing. Moreover, findings demonstrate that for undervalued firms, effect of agency costs is stronger but for overvalued firm, it is weaker and negative. Results are consistent with previous studies.

Key Words

Agency cost, Equity mispricing, Information Asymmetry

Introduction

The concept of stock mispricing has been the subject of widespread discussion in corporate sector for past many years. Mispricing means deviation market value from intrinsic value (Alzahrani & Rao, 2014). The stocks are observed to be either underpriced or overpriced- both of which arise mainly because of information asymmetry. A number of researchers have examined information asymmetry as main determinant of mispricing. Mispricing could be the outcome of clash of interest between stakeholders of a company, as opposed to the argument that stock mispricing is exclusively decided by the market.

On the other side, even without any clash of interest, asymmetric information can alone become the cause of mispricing. When there is difference in precision and access of information among insiders and outsiders, one may interpret the possibility of the company's stock to be valued in accurately due to the uncertainty about future cash flows.

After the pioneer work of Jensen and Meckling (1976), the topic of agency problem has got wide coverage in the literature. A number of studies confirm that stock prices are sensitive to the existence of agency disputes and the agency cost.

Agency problem can increase the cost of debt as well. When there is a clash between managers and owners, creditors may impose limitations on exploitation of their interest. This increases cost of equity as well because of clashes between shareholders and managers. When manager's interest is separate from owner's interest, shareholders must bear the cost. The objective of this work is to investigate the influence of cost faced by agency issue on mispricing of stock.

Mispricing is affected by several factors for instance, psychological beliefs, short selling constraints, money illusion, selective information disclosure provoke various beliefs, errors generated by analyst forecasting, and information asymmetry (DassMass & Patgiri, 2008; Delong, 1990; Brunnermeier & Julliard, 2008; Scheinkman & Xiong, 2003; Jiang, Xu & Yao, 2009; Hribar & McNis, 2012) but out of them agency cost is the most crucial factor because it badly influences corporate performance and is considered as enigma.

According to Modigliani and Millers' (1958) assumptions, there is no asymmetric information problem and capital market is perfect. Corporations can get funds by both sources i.e. internal and

external. After that Mayers and Majluf (1984) argued that there exists information asymmetry problem due to which capital market is imperfect and both sources of finance are not perfect alternatives. The existence of asymmetry of information has become the reason of agency problem, where executives and stockholders have conflict of interests. To eradicate such type of conflict of interests among agents and owners, firm faces agency costs to line up objectives of both parties. Therefore, the purpose of current work is to shed light on the impact of agency costs on stock mispricing especially in context of emerging economy such as Pakistan.

This study contributes in various ways. Firstly, for academicians it provides a baseline on the linkage among agency costs and equity mispricing by enriching the existing literature in emerging economies context such as Pakistan as this, study is conducted with empirical evidence in an emerging economy such as Pakistan. Various studies have been conducted on equity mispricing and investment however those are not sufficient and cannot be summed up to developing economies on the grounds that each nation and its budgetary markets have their own capital structure. Furthermore, Pakistan is a developing nation so it is essential to determine the influence of agency costs on equity mispricing for firms listed on the Pakistan Stock Exchange. Pakistani markets have dissimilar ownership structure and corporate financial mechanisms and its dynamics are different from developed markets. Secondly, it provides guidelines for practitioners that how agency conflict can be minimized by offering equity based compensation instead of cash based incentives and ultimately market value for the firm can be maximized. Likewise, empirical studies are conducted in established countries only, and evidence from developing market especially in Pakistan is limited.

Literature Review

There have been a lot of corporate failures over recent past and many CEOs had to go imprisonment. What went wrong? It was the system in which they were working, a system in which equity became so hazardously overvalued that a lot of CEOs wound up, where excessively high stock valuations led to huge devastation of business and societal value. Also, the issue was aggravated far than it must be on the grounds that couple of executives or boards had a thought of the ruinous powers included.

The cost which arises due to clashes among investors and managers of firms is agency cost and these clashes arise due to demand by investors for healthy benefits in their favor. Owners are not sometimes satisfied by decisions taken by managers, which, causes conflict among them. There could be many facts that cause conflicts such as, manager's compensation. Companies have two categories of shareholders; controlling or majority and non-controlling or minority shareholders. Conflict between them ascends when controlling investors nose dive to declare sectional vessels that they will not be subjugated. Deficiency of trust amongst them clues to clashes. As a consequence, non-controlling stakeholders stung as primary, and main stream stakeholders as proxies of corporation. Revelries encompassed are government, creditors, employees, shareholders, clientele, etc. Difference of opinion arise when shareholders sense that bondholders are captivating unwarranted assistance of their situation.

Myers and Majluf (1984) commented that firms lose their precious investment if firms have greater information asymmetry. A number of researchers determined the impact of information asymmetry on misvaluation. Agrawal and Knoeber (1996) found that sometimes executives of the company take undue benefit of their positions for their self-interest instead of putting their full efforts to achieve shareholders' objectives. This creates agency problem in the company which may cause misuse of company's resources including debts and may impact profitability. They examined 800 firms from USA to evaluate the risk associated with agency problem and performance of company. Kempf (1998) studied the association between mispricing and short selling. The researcher explained limitation of short selling as vital factors of mispricing. Nanda and Narayanan (1999) argued that market can watch the total flow of cash of the company other than the divisional cash flows of individuals, due to which misvaluation occurs in the securities of firms.

Ang, Cole and Lin (2000) argued that organizations with different management and ownership structures have different measures of relative and absolute agency costs and also explained two other parameters of agency costs; the difference in expense of dollar of a firm facing agency cost and the firms facing no agency cost; the second one is the efficiency ratio calculated through the ratio sales to assets.

A large part of mispricing stocks is due to the lack of free access to information for external users. When externals have inadequate information, their insecurity enhances. If complete and accurate information is available to investor about firm, but future cash flows are unpredicted or unobservable, even then there are greater chances of mispricing. Healy and Palepu (2001) explained that misvaluation arises due to unequal access of complete information between executives and shareholders, which are not completely set on. In addition to unequal access of complete information, the absence of the precision or transparency of information can worsen the harshness of the conflict of interest.

Jensen (2004) examined the link among agency costs and mispricing and showed that if a firm's stock price is too high, too high means a level at which organization will be not capable to execute performance needed to helping the market's valuation, the cost of equity turns out to be considerably exaggerated and executives who desire to remove it are looked with frustrating the capital markets. This value resetting (disposal of overvaluation) is not value destruction in the light of fact that the overvaluation would vanish in any case. The subsequent stock value decrease will create generous pain for investors, board individuals, supervisors and representatives. The prospect of this value resetting pain makes it difficult for management and board members, leading to decrease in value of the firm.

Chang, Faff, Kwok and Wong (2009) also researched the topic and found the link between money constraints, company's investment and mispricing. The research demonstrated that financially unrestrained organizations are flexible in changing their wellsprings of financing for company enthusiasm in financial market mispricing. Particularly, financially unrestrained companies have a propensity to have lower (higher) cash flow responsive situations of over valuation (under valuation). This gives an explanation of why unimpeded firms have greater evaluation than districted companies.

Fung and Tsai (2009) analyzed major market influences on merger. Such mergers are probable to finance by the company shares with elevated price and take responsibility of more market consumption. Kim and Faff (2010) analyzed that there is direct association between market risk and mean return of massive stock but not from smaller stock, by using Fama French factors through multi scaling approach.

Li, Henty et al., (2011) computed the link between stock mispricing, corporate investment and compensation in their study; the researchers investigated the empirical model on sample of Australian companies and asserted that there is weak relationship between mispricing and investment. The results also indicated positive relationship in investment level and equity based compensation.

Pantzalis and Park (2014) explained the association between mispricing and agency cost. They also illustrated that imperfections exist in the markets e.g. cost of transaction, information asymmetry and unequal access of complete information or less stockholder consideration. The researchers took data for the period of 19 years from 1985-2004. Pantzalis and Park (2014) found casual relationship between costs incurred by agency problem and mispricing. In addition, they proposed that if an organization gives best compensation to their managers then it has positive impact on company's performance and if does not give them best compensation then it leads to extensive mispricing.

Aras and KutluFurtuna (2015) examined whether governance efficiency reduces the agency costs created by agency problem, taking firms from Istanbul. In their paper, researchers used panel data regression and analyzed that the highly concentrated companies are more engaged with agency problem in turkey.

Doukas and Zhang (2015) studied the bank mergers and noted that the bidders are overvalued as compared to their targets. They also find that high value bidders mostly use stock rather than cash and increases compensations of their top managers after the merger. Data from NASDAQ and CRSP for 21 years from 1985-2006 is used in this study. Abdeldayem (2015) ascertained the association among agency costs and mispricing on Bahraini firms and concluded that there exists positive relationship among agency costs and equity mispricing.

Under-or overvaluation of a firm can be because of market inefficiency, or it can happen in a market that is semi-strong (when the market does not have the information accessible to executives). It doesn't make a difference for my investigation here whether markets are effective or not. Besides, there is a straightforward principle for chiefs to tell whether their stock price is overvalued: When directors see it is incomprehensible for them to meet the execution necessities to legitimize the present cost of their value, the firm is overvalued. What's more, when executives cook the books or participate in other extortion and deceiving bolster their company's stock value; we realize that they knew with a lot of sureness that their firm was overvalued. As per agency theory, the divergence of interest is due to unequal access of information where managers have more information than shareholders. Although many researchers around the world investigated its influence, however, in Pakistani prospective, no research was conducted and there is existence of gap in context of Pakistan, which is filled by present study along with the related evidence.

Research Methodology

The population comprises of all non-financial firms listed on Pakistan Stock Exchange and the Sample is PSX 100 index during the period of 2008 to 2016. Financial firms are precluded from the sample because of holding liquid assets to meet the cash withdrawals needs (Drobetz & Gruninger, 2007; Pinkowitz, Stulz, & Williamson, 2006).

There are a total of 68 firms taken as sample during the period of 2008 to 2016. The data for this study is secondary and it is gathered from annual reports. Annual reports are acquired from the company's' websites, and

from different data sources such as Standard Capital Site, PSX, and Share prices data is taken from Business Recorder website. The following equation is estimated to find out the results of study.

$$\text{Mispricing} = \beta_0 + \beta_1 \text{agency cost} + \beta_2 \text{profitability} + \beta_3 \text{size} + \beta_4 \text{leverage} + \mu_{it} \quad (1)$$

In equation 1, dependent variable is mispricing and agency cost is independent variable, profitability, size and leverage are taken as control variables. This equation is used to assess the influence of agency cost on equity mispricing. The moderating role of managerial ownership is assessed by estimating the following equation.

$$\text{Mispricing} = \beta_0 + \beta_1 \text{agency cost} + \beta_2 \text{agency cost} * \text{executive ownership} + \beta_3 \text{profitability} + \beta_4 \text{size} + \beta_5 \text{leverage} + \mu_{it} \quad (2)$$

In equation 2 mispricing is a dependent variable, agency cost is independent variable, interaction term of agency cost* executive ownership is taken as moderating variable. This equation is used to check the influence of agency cost on mispricing.

The sample is then divided into two parts on the basis of mispricing; the overvalued firms and undervalued firms. Equation (2) is then separately estimated for both sub-samples. Ordinary least square method is used to determine the effect of agency cost on equity mispricing. All the assumptions of OLS method are checked before final estimation such as normality, multicollinearity, autocorrelation, heteroscedasticity etc.

Variables

A) Mispricing

Theoretically Stock mispricing is a difference between market value and intrinsic value (Alzahrani & Rao, 2014). Following Rhodes-Kropf (2005), fundamental value V , is calculated using following equation.

$$\ln(M)_{it} = a + a_1 \ln(\text{assets})_{it} + a_2 \ln([\text{Net Income}]_{it} + a_3 (\ln([\text{NI}]_{it}) \times D(\text{NI} < 0)) + a_4 \text{LEV} + \epsilon_{it}$$

Through this equation we find the fundamental value to estimate mispricing. If the difference is positive, it means that firm is overvalued and if the difference is negative then these firms are undervalued and if the value is equal to zero then firms are fairly valued.

B) Agency Cost

Cost which arises due to clashes among shareholders and managers is agency cost and these clashes arise due to demand by shareholders for healthy benefits from managers. Besides this, executives are in a position to provide enough benefits and flourishing their business. This charge of discrepancy is termed as agency cost. There could be many facts that cause conflicts such as manager's compensation, stockholders relishing extraordinary incentives, stockholder shunting self-goals etc.

Agency cost is measured through asset utilization ratio. Asset utilization ratio proxies the effectiveness in deploying assets of the company's' management and computed as sales to total assets. The concept behind the use of asset utilization ratio that it is an indicator of agency costs, when a company has low sales/ total assets it is expected that executives making poor decisions related to investments acting in inefficient ways, using executives perquisite, etc. As a result, the ratio should be conversely associated to agency costs. (Ang et al, 2000).

C) Executive Ownership

It shows the portion of stock owned by firms' executives. When managers have ownership of the firm, conflict of interest will be lower that ultimately reduces the agency costs. (Pantzalis & Park, 2008; Pantzalis & Park, 2014).

D) Profitability

Profitability is measured through accounting based firm performance indicator i.e. net income/total assets (Pantzalis & Park, 2008).

E) Leverage

Leverage shows the debt of the firm and it is computed as Long-term debt/total assets (Pantzalis & Park, 2008; Pantzalis & Park, 2014).

F) Size

The log of total assets (Rama, 2001), in this study effect of profitability, leverage and size are controlled to get accurate and better-result.

Results and Discussion

Table 1. Descriptive Statistics

Variables	Mean	Median	SD	Maximum	Minimum
Agency cost	1.26314	1.142552	0.951445	4.978067	0.596225
Mispricing	0.075419	0.018069	1.309822	4.271257	-5.464131
Leverage	0.458381	.488165	0.285674	.736933	.064978
Size	16.59134	16.52650	1.98475	24.40202	10.09138
Profitability	0.102826	0.081059	0.341501	2.696032	-2.841795
Executive Ownership	0.2840673	0.2499488	0.2050357	0.7073383	.0214608

Table 1 illustrates of descriptive statistics of agency cost and equity mispricing, moderating variable and other control variables.

Table 2. AgencyCost and Equity Mispricing

Variables	Coefficient	T-statistics	p-value
C	-0.0857	-4.7861	0.000
Agency cost	0.05124	2.8645	0.0387
Profitability	-0.1539	3.8397	0.000
Size	-0.00678	-0.1454	0.8844
Leverage	-0.1424	-3.4952	0.0005

Table 2 exhibits the coefficient value of agency cost is 0.05124 which means that if agency cost is increased by 1%it brings 5% variation in equity mispricing, so, we confirm that agency cost positively affects the mispricing. This positive relationship also confirms that managers and shareholders do have conflict of interest and this conflict ultimately becomes the reason of equity mispricing. This conflict of interests arises due to the existence of asymmetric information where managers have more or better information than stockholders.

Results are in accordance with earlier studies (Zhang, 2006; Pantzalis & Park, 2008; Pantzalis & Park, 2014; Abdeldayem, 2015). Similarly, the coefficient value of profitability is -0.1539.The coefficient for size is -0.00678, implies a negative influence of size on mispricing but statistically insignificant. The negative coefficient of leverage shows that there is a negative effect of leverage on mispricing, which is aligned with findings of (Pantzalis & Park, 2008). The logic behind the negative influence of debt on mispricing is that when a firm is using debt managers will be restricted or constrained because they have to meet their obligation at any condition due to which there will be no conflict of interest which ultimately decrease the equity mispricing.

Agency Cost, Executive Ownership and Equity Mispricing

Table 3. Agency cost, executive ownership and Equity Mispricing

Variable	Coefficient	T-statistics	p-value
C	-0.6269	-1.1789	0.2392
Agency Cost	0.1031	1.7951	0.0740
Agency-Cost* Executive Ownership	0.05822	2.4672	0.0406
Profitability	-0.44405	-2.2636	0.0241
Size	-0.01346	0.47042	0.6383
Leverage	-0.8836	-2.5118	0.0124

Table 3 depicts the results of moderating role of executive ownership on the relationship. The agency cost has a positive and significant relationship. The coefficient of interaction term is 0.05822 with 0.0406. The interaction term shows that when managers have ownership in firms' equity conflict of interests will be lower which decreases the agency cost and ultimately decrease the equity mispricing. As researchers suggest that there should be equity based compensation Results are consistent with (Zhang, 2006; Bergstresser & Philippon, 2006; Pantzalis & Park,

2008). The coefficient value of executive ownership is 0.08716, which implies a positive influence of executive ownership on stock mispricing.

Similarly, the coefficient value of profitability is -0.44405 which means negative and significant relationship. These findings are aligned with findings of (Pantzalis & Park, 2008). The negative coefficient of leverage shows that there is a negative effect of leverage on mispricing. Aligned with findings of (Pantzalis & Park, 2008). The logic behind the negative influence of debt on mispricing is that when a firm is using debt managers will be restricted or constrained because they have to meet their obligation at any condition due to which there will be no conflict of interest which ultimately decrease the equity mispricing.

Agency Cost, Executive Ownership and Equity Mispricing (Overvalued Firms)

Table 4: Agency cost, executive ownership and Equity Mispricing for overvalued firms.

Variables	Coefficient	T-statistics	p-value
C	0.7852	2.3564	0.023
Agency cost	-0.0739	-0.6291	0.05301
Agency Cost * executive ownership	0.08468	2.7911	0.0350
Profitability	0.43379	4.3604	0.0000
Size	-0.2425	3.0896	0.0023
Leverage	- 0.04154	0.4009	0.688

Table 4 shows the coefficient of agency cost is -0.0739, the negative coefficient of agency cost shows that there is a negative influence of agency cost on stock mispricing when firms are overvalued. This means, when the firm is overvalued, an increase in conflict between managers and shareholders will push the price downwards, towards its fundamental value and it may even become undervalued. The effect of executive ownership on the relationship is positive and significant as evident by the coefficient of interaction term. The positive coefficient shows that when executive ownership is higher, even an increase in agency cost will lead towards higher mispricing as managers will not let share price to reduce when they themselves own shares. The results are consistent with existing studies (Michael C. Jensen, 2004; Zhang, 2006; Bergstresser & Philippon, 2006; Pantzalis & Park, 2008).

As literature suggests there should be equity based compensation because it is considered really an effective tool to align interests of various stakeholders. Results are consistent with of (Zhang, 2006; Bergstresser & Philippon, 2006; Pantzalis & Park, 2008). The positive coefficient of executive ownership implies that there is a positive influence of executive ownership on stock mispricing. The reason behind is that when managers have ownership of the companies' stocks conflict of interests and divergence of objectives will be lower that lessen or decrease the agency cost which ultimately decrease the equity mispricing. Similarly, the effect of size is positive and significant, consistent with findings of Pantzalis and Park (2008). The positive effect of leverage contradicts with findings of Pantzalis and Park (2008). The reason is, when a firm is using less debt managers will be restricted or constrained because they have to meet their obligation at any condition due to which there will be minor conflict of interest which ultimately increase the equity mispricing but when firms using debt managers will be more rational because they have to pay with fixed amount to lenders because if they do not pay firms lost short term survival which becomes the reason to decrease firm performance.

Agency Cost, Executive Ownership and Equity Mispricing (Undervalued Firms)

Table 5. Agency cost, Executive Ownership and Equity Mispricing for Undervalued Firms.

Variables	Coefficient	T-statistics	p-value
C	-0.91925	-8.3357	0.000
Agency cost	0.09379	-1.70522	0.0899
Agency cost*executive ownership	-0.05776	-2.08085	0.0389
Profitability	-0.1374	1.16052	0.0872
Size	0.01809	-0.00393	0.9691
Leverage	-0.00394	-2.8416	0.005

Table 5 reveals that the coefficient of agency cost on mispricing is positive when firms are undervalued. That pure effect of agency cost on mispricing is positive which reveals that when firm is undervalued, a conflict between managers and shareholders will further lower the price. Results are consistent with the studies of Zhang (2006), Pantzalis and Park (2008), Pantzalis and Park (2014) and Abdeldayem (2015). The moderating effect of executive ownership is negative and significant which reveals when executive ownership is higher, even a rise in agency cost

will lead towards an increase in stock prices thus leading the price towards its fundamental value and may be towards overvaluation. The results are consistent with Zhang (2006), Bergstresser and Philippon (2006), Pantzalis and Park (2008).

Conclusion

We conclude that in the context of Pakistan, there is a positive effect of agency cost on equity mispricing. In Table 1, the overall influence of agency costs on equity mispricing is determined and the findings are revealed. Moreover, combined effect of managerial ownership and agency costs on equity mispricing is determined. Furthermore, this study investigated whether the relationship remains the same for two different groups of stock mispricing (overpriced group and underpriced group). The results reveal that relationship is different for the two groups as explained earlier.

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