

QUALITY AND LEVEL OF RISK MANAGEMENT EXPOSURE AND ITS IMPLICATIONS: EVIDENCE FROM PAKISTAN

N. Jaweed¹, A. Javed², Z. Mehmood³, M.A. Saeed⁴

^{1,4}Department of Management Sciences, Bahria University, Islamabad,
Pakistan.

²Pakistan Institute of Development Economics (PIDE), Islamabad,
Pakistan.

³College of Business Administration, King Saud University, Riyadh,
Kingdom of Saudi Arabia.

ABSTRACT

This study explores the simultaneous association among quality of risk management exposure, cost of capital, and capital structure in Pakistan. The data comprises of 92 non-financial firms spanning over five years (2010-2014) listed on the Pakistan Stock Exchange (PSE). The generalized method of moments (GMM) is used to study endogenous relationship between variables and first lags are used as instruments. The findings are congruent with the recent research on the said topic. The findings indicate that simultaneous relationship exists among quality of risk management exposure, cost of capital and capital structure. The major implication emerging from these findings suggest that firms should try to maintain an optimum level of capital structure which minimizes the cost of capital and ultimately these two will help to manage risk enhancing the value of firm.

Keywords: *Capital structure, Cost of the capital, Risk exposure quality, GMM estimation approach*

1) INTRODUCTION

In the era of globalization, quality of risk management exposure may become serious dialogue among theorists, researchers and practitioners especially in emerging economies. The analysis of risk exposure and its role in capital structure and capital cost is highly argued issue in corporate finance (Fatemi and Luft, 2002). The academicians and practitioners believe that quality of risk management practices by individual firms have potential to increase the firm's value by obtaining an optimum capital structure and reducing capital cost (Smithson and Simkins, 2005). Stulz (1996) argued that quality of risk management leads to the optimization of capital structure. The traditional capital cost model proposed by the studies of Doherty (2005) and Brien (2006) show that risk management attempts to reduce the capital cost of the firm and to enhance the level of confidence of the firm in competitive market. The present study empirically investigates the relationship between quality of risk exposure, capital structure and the capital cost of the firm to enhance the firm's value and level of stakeholders' satisfaction specifically in the listed companies of Pakistani Stock Exchange (PSE). These listed firms are considered large organizations because of their highest market capitalization and having the potential to enhance their shareholder's wealth by providing quality of risk management.

2) LITERATURE REVIEW

It is contended in the previous studies that management of risk implies opposing effects on the debt capacity of the firm and it will not always lead to a higher debt capacity (Dionne and Triki, 2004; Fatemi and Luft, 2002). These studies indicated that quality risk management maximizes the managerial effectiveness and the value of the firm. This vantage point is based on the assumptions of Modigliani and Miller (1958) which states that structure of capital is not related to the corporate value. This approach was most productive in the discipline of corporate risk management in both theory and practice. Also, strongly assumed quality of risk management leads to little fluctuations in the cash flows and increase the value of the firm to maximize stakeholders' wealth. The rationale for the management of risk were construed from the Modigliani and Miller theory of high debt level, increase in taxes, decrease in liquidation cost (Smith and Stulz, 1985), relying on internal source of funds (Froot et al., 1993), asymmetry in

information (Zhao, 2003) and comparative advantage (Stulz, 1996). Therefore the prime benefit of quality risk management for the firm is the higher corporate value and the stakeholder satisfaction.

Davies et al. (2006) explored the risk exposures of foreign exchange (FX) in the exporting firms of Norway to find out the determinants of the risk management decision. This study focused whether the companies were exposed to foreign exchange and risk management instruments that included both internal and external measures. This emphasis led to thorough analysis for the determination of risk management variables i.e., tax savings, future bankruptcy cost, decreasing underinvestment risk, reduction in the cost of external financing, managerial incentives for risk aversion and other determinants such as size, internationalization and liquidity.

Batram et al. (2011) explores quality of risk managing techniques to reduce the risk of the firm and maximize shareholders wealth. This study emphasized on the usage of risk management tools in the firms. The data comprised of 47 countries in the various sectors of the economy. The findings of this inquiry indicated non-financial organizations have more advantage as compare to financial firms of using risk management instruments to reduce the probability of risk. Further, based on empirical evidences Batram and his colleagues contended, the use of risk management tools by the firms' leads to risk reduction and the effect on the firm value is positive but not significant. The findings of this study also suggested the usage of risk management instruments primarily reduce the business risk which decreases the beta of the firm, lowers the cost of debt and hence increases the firm value. More simply, lower beta indicates the use of risk management tools lead to lowers the cost of capital that affects the investment strategy and firm's profitability. The overall findings of this study indicate that firms with more exposure to exchange rate, market interest rate and commodity price risk use more derivatives (Batram et al., 2011).

Nguyen and Faff (2002) analyzed the factors for the use of derivatives in the firms of Australia. The focus of their study is to find the factors used to determine the use and the extent of risk management instruments. The study examined the data of 469 Australian companies for the years 1999 and 2000. The results showed that size, debt and liquidity are the major factors for the use of risk reducing techniques.

Dionne and Triki (2004) demonstrated the factors of management of risk exposure for the sample of 36 gold mining firms of North America over a period of seven years. Through running the regression of single equation model they found that managerial risk aversion, bankruptcy costs, cost of asymmetry in information, sizes and taxes are significant determinants of the quality of risk management decision. Based on their empirical findings, they suggested that risk management leads to increase in the utility of managers and the value of the firm to satisfy the expectations of its shareholders. The parameters of corporate governance like the board of directors' structure and the key managerial positions also do not affect the risk management decision. Dionne and Triki (2004) modeled debt as endogenous variable when studying risk management (RM) and suggests that does not lead to high level of debt by the firm. Based on the simultaneous equation system findings, they asserted that firms use risk management not to increase their level of but rather to decrease the cost of their financial distress.

Judge (2002) collected data through financial statements of the largest 400 UK companies and survey of corporate treasurers. The results showed strong link between the risk management decision and the expected bankruptcy cost unlike previous studies. The reason of this discrepancy might be because he included all hedgers instead of only derivative users. In his study Judge used binary variable to gauge the level of risk management and found the cross sectional differences that show consistency with previous studies. These results also indicated that firms with large cash balances don't pursue risk management. But the debt level and exposure to foreign currency are related to risk management decision. This vantage-point strongly supported the stance that firms with risk management activities enjoy economies of scale. This study is quite different in the sense because it used data from the survey and annual reports for the same time period.

Clark and Judge (2005) confirmed that hedging is not limited to derivatives only. They used data from 441 firms of FT 500 listed on the London Stock exchange in 1995. Similarly, to the study of Judge (2002), they collected data from survey and annual reports to increases the reliability of their findings. The results from univariate, multinomial logit and ordered logit regression verify that firm's quality of risk management decisions are in harmony with the past theories. They concluded that firms with lower cash balances engage in risk management and firm's exposure to exchange rate

risk influences their risk management decision. Judge (2006) conducted another study and found strong linkage between risk management and expected cost of financial distress. The findings of this study mainly supported his definition of risk management that included both users of derivatives and non-users. In this study Judge also collected data from the annual reports and through survey questionnaire from 400 UK listed companies. The results derived from logit and multinomial logit tests that shown firms with greater cash balances, more chances of bankruptcy, involved in foreign trading and short term liabilities manage risk with derivatives. Thus firms with different opportunities, incentives in reducing risk and exposure of financial price use different techniques to manage risk.

It is evident from the extensive review of literature that quality of risk management and its interaction with capital structure and capital cost is long standing interest in the field of inquiry. Numerous studies have been conducted to analyze the risk exposures encountered by the organizations in dynamic and competitive environment. Therefore, the present study attempts to analyze quality of risk management exposures faced by the firms in Pakistan and its implications on capital structure and capital cost. It may also be observed that not many attempts have been made in the field of inquiry particularly in the context of Pakistani listed companies to use advanced econometric estimation for the analysis of data to develop logical perspective in this area of investigation.

3) METHODOLOGY AND DATA

This section includes the data collection, estimation techniques used in this study and the models of level of risk exposures, capital structure and capital cost along with the operational definition of variables.

3.1) Data

The unit of analysis of the present study comprises of the firms listed on Pakistan Stock Exchange. The data set consists of 92 non-financial firms which spans over the period from 2010 to 2014. The source of data in this study is the secondary data comprising of Balance Sheet Analysis (BSA) published by State Bank of Pakistan (SBP), annual reports and websites of the firms as well the official website of the KSE. It was a cumbersome

activity to find data on the level of risk exposures from the footnotes of the annual reports.

3.2) Estimation Technique

The decisions of capital structure and level of risk exposures as a result cost of capital are interdependent. Therefore, the simultaneous equation estimation technique on the system of three equations was considered more appropriate and consistent with rather similar studies of Maghyereh (2005) and Getzmann et al., (2010). The Generalized Method of Moments (GMM) is used as estimation technique to study endogenous relationship between level of risk exposures, capital cost and capital structure. First lags are used as instruments and Sargen test is used to check the validity of the instruments.

3.3) Model Specification

3.3.1) Level of Risk Exposure Model

The structural equation of level of risk exposure model is given below following Doinne and Triki (2004) and Nance et al., (1993).

$$Rml_{it} = \alpha +_0 + \alpha_1 CS_{it} + \alpha_2 CC + \alpha_3 Size_{it} + \alpha_4 Profit_{it} + \alpha_5 InvOpp_{it} + \alpha_6 LQ_{it} + u_{it} \dots \dots \dots 1)$$

Where Rml=level of Risk exposure. This study uses level of risk exposures as dependent variable intended to find out its determinants. The study uses level of risk exposures as dependent variable to find its determinants. The construction of this variable is made as Bali et al. (2006) and Miller (1994) have defined in their study. Level of risk exposures is measured as the average of financial instruments risk exposure. It further comprises of four components which are average of 1) credit risk, 2) liquidity risk, 3) foreign currency risk, and 4) interest rate risk. Average of these four indicators is taken by assigning equal weights to construct the variable which represents the quality and level of risk management exposure.

The International financial reporting standard (IFRS) was implemented by Security and Exchange Commission of Pakistan (SECP) in 2008 on companies. IFRS-7 Document stated that an entity shall disclose

information on the nature and extent of risk arising from financial instruments on the reporting date. Therefore, the average of risk exposures in the financial statements is taken as a proxy to measure the quality of risk management exposures. If the company is reporting its risk exposures in the financial statements it is actually improving the quality of risk management.

CS = Capital Structure: Firms with high level of debt are more likely to reduce risk exposure due to more financial risk (Dionne and Triki, 2004, Nance et al., 1993)

CC = Cost of Capital: The studies of Shimpi (2002), Doherty (2005) and Brien (2006) present models arguing that cost of capital will lead to different levels of risk exposures of the firm. However the objective remains to reduce the capital cost.

Size: An extensive review of literature suggests positive relation of level of risk exposure with firm size is expected (Dionne and Triki, 2004). The more dominant studies are evocative of the measurement of the size by taking the natural log of sales volume of the firms (Javid and Immad, 2012; Shah and Hijazi, 2004).

Profitability: Earnings before interest and taxes/Total Assets. The firms with large size, high growth options and high profitability are expected to pursue risk management activities. A profitable firm is with high pretax income, will opt for high leverage to save taxes and is likely to engage in risk management strategies to reduce financial distress costs. (Nance et al., 1993, Dionne and Triki, 2004)

InvOpp = Investment Opportunities: $IOP = TE/Ps * TS$. IOP is representing investment opportunities available for firms, TE stands for total equity, Ps is indicating for share price whereas TS is denoting for total number of shares. Froot et al., (1993) proposed that greater investment opportunities will lead the firm to higher levels of risk exposure to ensure more internally generated funds. Thus a positive relationship is expected (Batram, 2001).

LQ = Liquidity: Current Assets/Current Liabilities. Batram et al., (2011) find that liquidity is also a significant determinant of risk in the firm. Large firms engaged in various investment opportunities incur low liquidity and

are likely to pursue risk management activities. Thus a negative association is predicted between liquidity and the level of risk management exposure (Stulz, 1996).

3.3.2) Capital Structure Model

Capital structure is the mix of financing which leads to optimization of firm in terms of risk minimization and return maximization. Numerous studies Javid and Immad (2012), Ahmed and Hanif (2011), Nance et al. (1993) have examined the determinants of capital structure. These studies identified firm growth, tangibility, size and profitability of the firms. The structural equation of capital structure is formulated as Javid and Immad (2012) have specified. So, the specification of the equation is given below.

$$CS_{it} = \beta_0 + \beta_1 Size_{it} + \beta_2 Profit_{it} + \beta_3 TaxSaving_{it} + \beta_5 CC_{it} + \beta_6 InvOpp_{it} + \beta_7 Tang_{it} + u_{it} \dots \dots \dots 2)$$

Here Capital Structure (leverage) is measured by total debt divided by total shareholder's equity (Nance *et al.*, 1993; Ahmed and Hanif, 2011)

Size: Large firms have fewer chances to face financial distress and are more levered (Frydenberg, 2004).

Profit = Profitability: Firms operating income divided by sales. More profits (operating income) less leverage, negative relationship is expected (Ahmed and Hanif, 2011, Dionne and Triki, 2004, Javed and Imad, 2012).

Tax Saving = Tax variable is estimated by the subtraction of ratio of profits before taxes and after taxes from unity as measured by Mishra (2011). Tax= 1- (profits before taxes/profits after taxes). The study employs this variable in the equations of both cost of capital and capital structure to investigate its impacts on these mentioned dependent variables in respective equations.

CC = Cost of Capital: It is evident from the literature that more equity financing in the capital structure leads to more cost of capital and alternatively more leverage in capital structure leads to lesser cost of capital due to tax savings. Thus a negative relationship is expected (Stulz, 1996, Solomon, 1963)

InvOpp = Investment Opportunities: Firms with more growth opportunities carry less debt, hence negative relationship is expected (Dionne and Triki, 2004)

Tang = Tangibility = All Long Term Assets/Total Assets. More tangible assets imply more collateral and more debt (Ahmed and Hanif, 2011) and (Dionne and Triki, 2004).

3.3.3) The Cost of Capital Model

The structural equation of cost of capital is given below as suggested by Omran and Pointon (2004).

$$CC_i = \gamma_0 + \gamma_1 CS_i + \gamma_2 RML_i + \gamma_3 Tang_i + \gamma_4 Size_i + \gamma_5 LIQ_i + \gamma_6 TaxSaving_i + \gamma_7 INVOPP_i + u_{ii} \dots \dots \dots 3)$$

Here $CC = W_e (K_e) + W_d (K_d)$

CC is representing cost of capital whereas K_d is showing cost of debt and K_e is denoting for cost of equity. It is important to mention that cost of debt is taken as the ratio of fixed capital and total long term debt (i.e. $K_d = FC/LTD$)¹ and similarly cost of equity is measured through Gordon growth model (1962) in terms of ratio of earnings per share to market value per share (i.e. $K_e = EPS/MV$)² as suggested by Hanif (2010) and Omron and Pointon (2004). They suggested that this measurement of K_e is suitable for emerging economies as in the Capital asset pricing model beta tends to be negative in such economies. Moreover, W_d is indicating ratio of total liabilities and total equity (i.e. $W_d = \text{Total liabilities}/\text{total equity}$) whereas W_e is calculated by subtracting W_d from unity (i.e. $W_e = 1 - W_d$).

CS= Capital Structure: As discussed above a negative association is predicted between capital structure and cost of capital (Stulz, 1996, Solomon, 1963)

¹ FC = fixed capital and LTD= long term debt

² EPS = earnings per share and MV= market value per share

RML = Level of Risk Exposure: The studies of Shimpi (2002), Doherty (2005) and Brien (2006) present models indicating that level of risk management exposure will lead to the reduction in the firm's cost of capital.

Tang = Fixed Asset; More assets will lead to more secure investment backing and hence lesser cost of capital. A negative association is predicted (Omran and Pointon, 2004).

Size = Large size firms may have lesser cost of equity due to economies of scale. A negative association is expected (Omran and Pointon, 2004).

LIQ = Liquidity: High liquidity might lead to inefficient use of funds, therefore the relationship can be either negative or positive (Omran and Pointon, 2004).

Tax Saving: Higher taxes will lead to lower cost of debt due to tax saving, hence lower cost on capital (Omran and Pointon, 2004).

InvOpp = Investment Opportunities: More investment opportunities will lead to higher cost of equity hence higher cost of capital. Positive and significant relationship is expected (Omran and Pointon, 2004).

4) RESULTS AND DISCUSSION

Table 1 below shows the descriptive statistics of the non-financial firms for the period 2010-2014 listed on PSE. The average value of fixed capital is 15.6 whereas standard deviation is 1.55. The average value of cost of capital is 2.19 and standard deviation is 1.13 which means on average non-financial firms have cost of capital of 2.19. The quality and level of risk management exposure shows mean of 14.9 and standard deviation is 1.91 which means that on average level of risk management exposures are 14.9. The capital structure has mean of 0.5 and 0.2 standard deviation which means that on average non-financial firms have 50% of debt and 50% of equity financing. Investment opportunities show average value of 0.11 and standard deviation is 0.15. Profitability has average value of 0.13 and 0.09 is the standard deviation. Size has mean value of 7.09 and standard deviation of 0.8. Liquidity has average value of 1.6 and standard deviation of 0.9. Tangibility has average of 1.19 and standard deviation is 0.9.

Table 1: Descriptive Analysis for Nonfinancial Firms

| Variable | Mean | Std. Dev. | Min | Max |
|-------------------|----------|-----------|----------|----------|
| Log fixed capital | 15.64353 | 1.550954 | 10.52829 | 18.90602 |
| Log CC | 2.198389 | 1.130482 | 0.390651 | 5.733002 |
| Log RML | 14.94878 | 1.915214 | 9.900506 | 20.32499 |
| Capital structure | 0.52385 | 0.21675 | 0.064 | 0.946 |
| Investment Opp. | 0.116312 | 0.154978 | 0.01 | 0.786 |
| Profitability | 0.137849 | 0.094188 | 0.028 | 0.444 |
| Size | 7.090609 | 0.819156 | 3.116 | 8.98 |
| Liquidity | 1.631957 | 0.95751 | 0.108 | 5.2 |
| Tangibility | 1.193397 | 5.684701 | 0.076 | 54.992 |

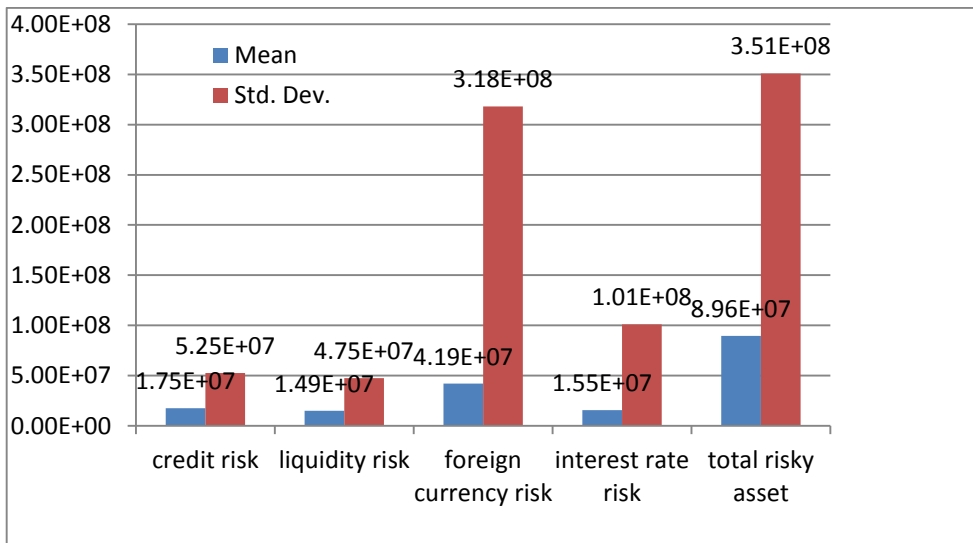


Figure 1: Level of risk exposures of nonfinancial firms

The figure 1 above is indicating that four types of risk exposures are faced by firms which are credit, foreign currency, liquidity and interest rate risk exposures and finally total level of risk exposures. Figure 1 show that nonfinancial firms face high level of foreign currency exposure, followed by interest rate, credit and liquidity risk exposures. It means that mostly nonfinancial firms face foreign currency risk exposure at as compared to other risks. This might be due to the currency fluctuations incurring in Pakistani rupee as compared to other foreign currencies. Secondly, firms

are exposed to interest rate risk due to uncertainty prevailing in the Pakistani market.

Table 2 below is indicating the Spearman Correlation Matrix for non-financial firms. The table shows that level of risk management exposure have positive and significant association with cost of capital, capital structure, fixed assets and the size of the firm whereas it has negative relationship with investment opportunities and profitability of the firm. The cost of capital has positive and significant association with capital structure, investment opportunities, profitability and size of the firm. Capital structure has positive and significant association with fixed assets and size. On the other hand, it has negative and significant association with investment opportunities and profitability. The results show that there is no problem of multicollinearity.

Table 2: Spearman Correlation Matrix for Nonfinancial Firms

| | Log RML | Log CC | CS | Log Fixed Capital | Investment Opp. | Profitability | Size |
|-------------------|----------|---------|----------|-------------------|-----------------|---------------|------|
| Log RML | 1 | | | | | | |
| Log CC | 0.1436* | 1 | | | | | |
| CS | 0.3116* | 0.1551* | 1 | | | | |
| Log Fixed Capital | 0.5835* | 0.0191 | 0.2760* | 1 | | | |
| Investment Opp. | -0.0267 | 0.3963* | -0.2072* | -0.2695* | 1 | | |
| Profitability | -0.1695* | 0.1091* | -0.3997* | -0.1750* | 0.1562* | 1 | |
| Size | 0.5464* | 0.2484* | 0.2193* | 0.4415* | 0.0995* | 0.0608 | 1 |

*stands for statistical significance level (i.e. 1%, 5%, and 10%)

The data is estimated using fixed effect model. Hausmen test is used for selection of models between Fixed and Random effect models. The study briefly discusses the findings obtained from fixed effect model. Fixed effect model is applied which has been proposed by Hausman model specification test and the result is given in table 3 as follows.

Table 3: The Estimated Results for Hausman Specification Test

| Models | Chi² Test Statistic | p-value | Inference | Conclusion |
|--------------------|---------------------------------------|----------------|-----------------------------|---------------------------|
| Nonfinancial firms | 41.83 | 0.0000 | Null hypothesis is rejected | Fixed effect is efficient |

The application of Hausman specification test is indicative that Chi² statistic is found statistically significant which shows that null hypothesis is rejected and alternative is accepted which means that fixed effect model is efficient and it can be used to obtain the determinants of quality and level of risk management exposure.

4.1) The Estimated Results for the Level of Risk Exposures, Capital Structure and the Cost of Capital

Table 4 contains the estimated results of impact of capital structure and cost of capital on the level of risk management exposures.

Table 4: Estimated Results for the Level of Risk Exposures, Capital Structure and the Cost of Capital

| | Model 1 Level of risk exposures | Model 2 Capital structure | Model 3 Cost of capital |
|--------------------------------|--|--------------------------------------|------------------------------------|
| Capital structure | 0.250*** (6.78) | | 1.646*** (7.85) |
| Cost of capital | -0.200*** (-2.97) | 0.045*** (5.76) | -0.113*** (-4.70) |
| Level of risk exposures | | 0.042*** (2.10) | -0.113*** (-4.70) |
| Size | 1.105*** (12.07) | 0.070*** (6.15) | 0.120*** (5.88) |
| Profitability | 0.601 (0.83) | -0.776*** -9.56 | |
| Liquidity | -0.050*** (-2.28) | | 0.048*** 4.43) |
| Tax saving | | 0.012*** (3.23) | 0.069*** (3.58) |
| Tangibility | 0.003** (-1.99) | | 0.07 (1.24) |
| Investment opportunity | 0.949* (1.62) | -0.266*** (-3.83) | 0.431*** (14.08) |

| | Model 1 Level of risk exposures | Model 2 Capital structure | Model 3 Cost of capital |
|--|--|--|--|
| Constant | 6.316*** (10.46) | -0.088 (-1.24) | -0.858* (1.79) |
| R² | 0.37 | 0.40 | 0.39 |
| Sargan J Test (p value) | 0.12 | 0.33 | 0.25 |

*Note: The z-stat is below the coefficient. The *, ** and *** indicate significance level at 10%, 5% and 1% respectively*

The estimation of GMM model gives us some model specification tests which are specified in table 4 above. The Table 4 contains R² and Chi² with their significance level as a testimony of good fitness. Model is estimated for non-financial firms where three dependent variables (log of level of risk exposures=Log RML, log cost of capital=Log CC, and Capital structure=CS) regressed on independent variables. The values of R² seems good which ranges 0.37-0.39 and equation of cost of capital have relatively higher R² 0.40.

4.2) The Estimated Results for the Level of Risk Management Exposures

Table 4 (column 2) represents the estimated results for the level of risk management exposures of the sample firms.

Based on these empirical evidences it is observed that capital structure has positive and statistically significant impact on the level of risk management exposures in firms. It indicates that the increase in external financing leads to the higher level of risk management exposures, other influences kept constant. This further explains that the firms which assess their credit, liquidity, foreign currency and interest rate risk exposures use more debt in the capital structure and less equity. By acquiring more leverage in the capital structure the firms exposes themselves to increased levels of risk. In this way the credit capacity of the firms would increase because firms may find equity more expensive (Stulz, 1996). The estimated results are highlighting that the increase in leverage of the capital structure may help the firm to utilize debt to manage risk exposures. Therefore the impact of capital structure on risk management appears positive and significant. These results are found congruent with high level of debt hypothesis by Faff and Nguyen (2002).

The estimated results of the size of the firm are indicative of the positive and statistically significant impact. The coefficient is greater than 1 which indicates that impacts are more elastic. Positive impacts can be interpreted as the large size of the firm is more inclined to disclose the risk exposures and engage in the better quality of risk management activities, other things being equal. These findings are congruent with the studies of Smith and Stulz (1985) and Dionne and Triki (2004).

The impact of the profitability is revealed as positive but statistically insignificant. It indicates that profitability does not have any significant influence on the level of the risk management exposures. This result is surprising because the impact of profitability is expected to be positive and significant on risk management. The results of liquidity are found statistically significant with negative sign. The increase in liquidity may lead the firm to maintain low levels risk management exposures as confirmed by Batram et al., (2011) and Stulz (1996).

The effects of the investment opportunities available for a firm indicate the positive and significant impact on the level of risk management exposures. The positive impacts suggest that other things being same increase in the available investment opportunities; the firms are more likely to manage level of risk exposures. Investment opportunities are source of large size of the firms and it makes the firms to rely on internal financing. However the expansions in investment opportunities provide resources to manage the level of risk exposures. The results of this study are congruent with the literature of Nance et al. (1993) and Batram (2001).

4.3) The Estimated Results of Capital Structure

Table 4 (column 3) represents the estimated results of capital structure equation.

The estimated results are indicating that the size of the firm have positive and statistically significant impact on capital structure. It demonstrates that the larger firms tend to have more leverage which is generally not easily available to small firms. The estimated impact imply that there is positive and highly significant association between size of the firm and capital structure. These empirical findings are found congruent with literature of Shah and Hijazi (2004) and Javid and Immad (2012). These results support

the bankruptcy cost theory that large firms have less chances of bankruptcy and will take more leverage because bankruptcy cost is small portion of their total fixed cost.

The impact of profitability is statistically significant. The estimated results indicate negative impact of the profitability of the firm on capital structure. It shows that other things remaining same higher the profitability of the firm, it will take more leverage and vice versa. The findings of the study are consistent with the literature of Shah and Hijazi (2004) and Javid and Immad (2012). The results support the pecking order theory which proposes that firms rely more on internal sources of funds than external sources of funds.

An extensive review of literature indicates little conclusive and unanimous impacts on the profitability. There are two major groups especially supply side group argues the positive impacts of the profitability (Modigliani and Miller, 1963) whereas demand side group argues the negative impacts (Rajan and Zingales, 1995). Especially the theory of pecking order implies the negative impact of the profitability on the leverage. Further, it is argued that the asymmetric information motivates firms to prefer internal capital sources over external capital sources. It ultimately makes profitable firm in a position to finance investments with the retained earnings.

Table 4 (Column 3) indicated positive and significant impact of the cost of the capital on capital structure. The estimated result show that the cost of capital implies that other things remaining constant; the increase in cost of the capital will lead to increase in debt financing. It is estimated that there is positive influence of the cost of capital on the capital structure of the firm. This result is congruent with the study of Omran and Pointon (2004) otherwise a negative relation is expected.

The available investment opportunities have statistically significant and negative association with capital structure. The negative sign indicates that other things remaining same, the more investment opportunities are available for a firm the more the firm will rely on equity and less on debt. The higher opportunities of investment expand size of the firm because it increases the sales of the firm. Those firms which have larger opportunities for investment would prefer internal financing because cost of external financing is higher therefore the firms will tend to avoid it. Hence, the

negative impacts of investment opportunities on capital structure are quite justifiable. The finding is justified by Dionne and Triki (2004).

The study also examines the impact of tangibility of the assets on the capital structure of the firm. The estimated finding indicates that the influence of tangibility of assets is highly significant and negative. It means that the more fixed assets firms employ, the lower a firm is utilizing debt other things remaining constant. These results are endorsed by the theorists of pecking order proposing that firm rely more on internal resources if available (Ahmed and Hanif, 2011) and (Javed and Immad, 2012)

However, these findings are not consistent with few studies such as Shah and Hijazi (2004) and Rajan and Zingales (1995). Their studies suggested that with increase in the fixed assets of the firms they are more likely to obtain external debt. They further claimed that the external financing is easily available at low cost because assets are used as pledge to secure debt. Therefore, positive association is investigated by aforementioned studies. But in the case of Pakistan, Shah and Hijazi (2004) has observed positive impacts of tangibility of assets on capital structure which is converse to this study.

The variable of tax has positive and significant influence which suggests that the increase in the tax payments would also enhance the option of debt financing by a firm. The reason is that due to debt financing the firms incurs tax savings on the interest payments which is similar with the expected result (Dionne and Triki, 2004)

4.4) Estimated Results for the Cost of Capital

The Model 3 is the cost of capital and the results are depicted in Table 4 (column 4).

The significant point in this equation is the inclusion of capital structure and level of risk management as independent variables. While other independent variables tangibility, liquidity, tax saving and available investment opportunities are same.

Empirically estimated results indicate that the capital structure has positive and significant impact on the cost of capital. This implies that other things remaining constant with the increase in the capital structure there is increase in capital cost. A firm requires external financing as the cost of capital is increasing; it further engenders increase in the debt of the firm to overcome cost of the capital. The cost of capital comprises of two costs credit and equity costs. The reverse causality is expected and logically this relationship may hold. These results are found consistent with existing literature Stulz (1996), Solomon (1963) and Orman and Pointon, (2004). More equity financing in the capital structure leads to more cost of capital and alternatively more debt leads to lesser cost of capital due to tax savings.

Similar to this situation the impact of the level of risk management is also found statistically significant. The findings also confirm the existence of the simultaneous relationship between level of risk management exposure and cost of the capital. Table 4 (column 4) indicates the negative influence of the level of risk management exposure on the cost of capital. The results justify that quality of risk management practices to manage risk exposures by firms lead to lower cost of the capital. It increases their profitability, makes firms self-reliant and ultimately would be helpful to lower the cost of the capital. The findings are in harmony with the results of Ahmed and Hanif (2011).

The impact of the log of total sales which indicate that firm size is found positively affecting but these results are not significant. Further, the tangibility of the firm has positive impact on the capital cost. This is might be due to the reason that more tangible assets would require more fixed cost and hence capital cost. It is not consistent with the expected relationship.

Moreover, the impact of liquidity is also found significant. The increase in the variable of the liquidity causes increment in the cost of the capital which is congruent with the finding of Omron and Pointon (2004). Tax savings and cost of capital have positive and significant impact which is contradicting the predicted results. This might be due to the reason that more tax savings means more debt and hence there is more bankruptcy cost.

Finally, the impacts of available investment opportunities on cost of the capital are also observed that is quite positive and significant. The increase in investment opportunities opens the avenue for firms to expand its size, and increase the probability of higher profitability. These opportunities may also motivate the firms to install more capital that ultimately enhances the cost of capital. Further the association between capital cost and investment opportunities is found positive and significant for the firms particularly in the context of Pakistani stock exchange listed companies.

5) CONCLUSION AND RECOMMENDATIONS

The estimation of the GMM model suggests that simultaneous causal relationship between costs of the capital; quality and level of risk management exposures, and capital structure have been found significant. These findings are consistent with previous studies that are conducted in a similar context (Dionne and Triki, 2004; Omron and Pointon, 2004; Ahmed and Hanif, 2011 and Javed and Immad, 2012).

As mentioned earlier the results of the first equation indicates the positive and significant influences of the capital structure on the level of risk exposures whereas cost of the capital also has significant effects on the level of risk exposures. Moreover, profitability, investment opportunities, and liquidity also have statistically significant impact on the level of the risk management exposure of the firms. The results of the second equation is also suggesting that level of risk exposures has significant and negative impacts on the capital cost, whereas capital structure has positive and significant impact. The control variables such as size of the firm, tangibility, tax saving and investment opportunities have significant impacts on the cost of capital.

The findings of the third equation demonstrate that cost of the capital has positive and significant effect on the capital structure. This result shows the presence of the simultaneous relationship between capital cost and capital structure. The size of the firm, investment opportunities, and profitability are the significant determinants of the capital structure. These results suggest the presence of the simultaneous relationship between cost of capital, capital structure, and the quality and level of risk exposures. Some implications on these bases are suggested as follows.

- Levels of risk exposures are important tool used by financial managers in non-financial companies which impacts capital structure and capital cost. Therefore to enhance the quality of companies, policy makers should pay more attention on the quality of risk management measures adopted by the firms.
- Firms must try to seek such activities which increases its size and expands availability of the investment opportunities which ultimately would be helpful to deal with risk attached with a respective firm.
- Financial managers while making risk management decisions should focus on the factors influencing quality of risk exposures, capital structure and capital cost to improve the value of the firm.

The future research can enhance the present study by incorporating following points:

- This study measured risk by taking average of assets risk exposure of the companies. Further studies may incorporate other proxies to measures risk.
- Future research in this area may include other significant factors influencing level of risk exposures, capital structure and cost of capital.
- Furthermore, the Capital Asset Pricing Model (CAPM) may be used in future studies to measure cost of equity.

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