

**The Determinants of the Cost of Equity: Evidence from Pakistan**

**Muhammad Akhtar**

*Assistant Professor, Riphah International University, Islamabad.*

**Dr. Ahmad Raza Bilal**

*Assistant Professor, Superior University Lahore, Pakistan*

**Dr. Muhammad Naveed**

*Assistant Professor, Riphah International University, Islamabad.*

**Abstract**

*This research investigates the determinants of cost of equity using a data set of 263 firms listed on Pakistan stock exchange. Keeping in view the signaling effect of information on the performance of capital markets in Pakistan, we used Capital Asset Pricing Model (CAPM) to calculate the cost of equity. Correlation and regression analysis were run to test the main effect of net earnings, retention of fund, time interest earned, gearing, fixed asset backing, long term debt, tax, market capitalization on cost of equity. The results' robustness is evidenced that market capitalization has significant impact on cost of equity. We also show that net earnings growth, retention of funds, times interest earned, gearing, fixed asset backing, long term debt and tax have no impact on cost of equity. Finally, we find a sector-specific range of cost of equity that falls between 11.54 to 16.78 percent. This indicates that financial markets in Pakistan are more volatile with respect to any information in line with the signaling theory.*

**Keywords:** Determinants of Cost of Equity, Capital Asset Pricing Model, Pakistan

The purpose of this study is to bridge the gap between theory and practice by analyzing the determinants of cost of equity. Although many studies have been undertaken on the determinants of capital structure, however insufficient attention has been paid to the determinants of cost of equity in emerging market. The cost of capital is an important issue in corporate finance, still very less is known about it in emerging markets (Barry, Peavy & Rodriguez, 1998). Majority of the studies on cost of equity suggest different determinants for cost of equity: Informational quality (Lambert, Leuz & Verrecchia, 2007), earning restatement (Hribar & Jenkins, 2004), disclosure level (Espinosa & Trombetta, 2007), Information Asymmetry (Lambert, Leuz & Verrecchia, 2012), Ownership (Core, Hail & Verdi, 2015), Voluntary disclosure (Clinch & Verrecchia, 2015), informed trading (Brennan, Huh & Subrahmanyam, 2015) and corporate social responsibility (Xu, Liu & Huang, 2015). All of these studies deal with developing economies and emerging economies but none of these studies has shaded lights in Pakistan perspective. A vast number of literatures suggest that due macro economic factors the determinants of cost of equity may vary from

country to country and culture to culture. Therefore the current study is an attempt to fill this gap aligned with the Pecking order Proposition.

Out of many objectives of corporate finance managers one is the maximization of the shareholders' wealth. The conventional measure of maximize of the shareholders wealth by increasing net income of the business is not a viable approach. The study of suggests that there is linear association between wealth maximization and cost of capital (Bhatnagar, Kumari & Sharma, 2015). However, the said objective could be achieved by lowering the cost of capital. We conducted this study in different industrial sectors of Pakistan, Thus Pakistani industry provided a natural laboratory for verifying the impact of different variables identified as determinants of firms' cost of equity. Several studies suggest several determinants of cost equity. In particular we examine how net earnings growth, retention of funds, times interest earned, gearing, fixed asset backing, long term debt, tax, and market capitalization may be helpful in determining the cost of equity.

Earning is a determinant of cost of equity (Fama & French, 1998). Growth in earnings stimulates the expectations of the shareholders which increase cost of equity (Bilal, Khan and Akoorie, 2016). Times interest earned is another determinant of equity. Greater interest coverage ratio reduces financial risk and cost of equity as well (Horne & Wachowicz, 1998). Debt financing will increase the financial risk and ultimately increases the expected return of the equity holder (Change & Rhee, 1990). Short term financing is on higher side as compared to long term financing in emerging markets (Booth, Aivazian, Demirguc-Kunt & Maksimovic, 2001). The investor requires compensation for risk and if risk diversification is not possible the cost of equity will increase (Clarkson, Guedes & Thompson, 1996). The study contributes to literature by examining the determinants identified in the west and applying them in the developing market like Pakistan.

### **Related Literature and Hypothesis**

The cost of capital is a blend of equity, preferred stock and debt which constitutes capital structure. Cost of capital has been productive and significant area of investigation in the field of finance (Da, Guo & Jagannathan, 2009). Two basic components which constitute cost of equity are dividend yield and capital gains; dividend yield may be regarded more determinable than capital gains (Pointon & Omran, 2004). Pecking order theory reveals that initially firm uses internally generated funds if not possible then, debt is used which leads to high leverage (Drobetz & Fix, 2003). Capital structure cause major impact on cost of equity cost (Modigliani & Miller, 1958). Static Trade off Theory emphasis that, firm sets specific targets for debt to value the firm (Mayers & Majluf, 1984). Signaling Theory by Ross (1977) shows that debt gives signals in the market about positive inflows.

### **Net Earnings' Growth and Cost of Equity**

Net earnings' growth and cost of equity have strong correlation. According to Bazley and Hancock (2004), Equity investor's assume all risks and is ultimately entitled for the rewards. In the same vein, growth in earnings will lead to high cost of equity (Fama & French, 1998). Earnings' has vital importance for the shareholders (Gibson, 1998). Public disclosure regarding earnings has association with the cost of the capital (botosan, plumlee & Xie, 2004). Country level disclosure has an impact on realized returns and cost of capital (Core, Hail & Verdi, 2015). It is further argued that increase in profits will increase the market price of the shares which will result in capital gain and hence will increase the cost of equity (Gibson, 1998). Companies with high growth opportunities have generally high price earnings ratio and companies with low growth opportunities have low price earnings ratio (Gibson, 1998). Based on the argument our first hypothesis can be stated as follows:

*H 1:* Net earnings' growth and cost of equity are positively correlated.

### **Retention of Funds and Cost of Equity**

The debate about the preferred mode of financing needs a special consideration with respect to Pakistan. The overall trend in the selection of modes of financing moves in the following way that retained earnings is preferred source of financing over the equity. If debt financing and equity financing are compared debt finance is also preferred over the equity. The better disclosure information to the users of financial statements has association with stock prices which effects cost of capital (Gelb & Zarowin, 2002). The specific reason is being aligned with the pecking order proposition that the equity cost will be reduced as internal funds should avoid issue costs (Krishnan & Mayer, 1996; Mayers, 1984). Therefore the study hypothesizes that:

*H 2:* Retention of funds has negative impact on cost of equity.

### **Times Interest Earned and Cost of Equity**

The ability of the firm to carry debt can be viewed by considering the interest earned and fixed charges coverage (Gibson, 1998). Gibson further argues that if the time interest earned is inadequate, firms will not be able to meet their interest obligations. Failure to meet interest obligation can results in legal action and bankruptcy (Brigham & Ehrhardt, 2002). Greater interest coverage reduces financial risk. Investors demand high return for the high risk. Therefore growth in earnings leads to greater interest coverage ratio which lowers the risk and ultimately negatively impact cost of equity. The higher ratio shows, that company can cover its interest payments and the capacity to take new debts (Horne & Wachowicz, 1998). Based on this view, the study hypothesizes that:

*H 3:* Times interest earned has negatively impact on cost of equity.

### **Gearing and Cost of Equity**

The use of fixed operating costs by the firm is called financial leverage or gearing (Horne & Wachowicz, 1998). Gearing presents the ratio of total liabilities to equity also known as capital structure ratio. The capital structure depicts the long term solvency of the firms (Khan & Jain, 1993). There is a strong link between gearing and cost of equity (Change & Rhee, 1990). High dividend payout ratio leads towards higher debt financing (Change & Rhee, 1990). Debt financing will increase the financial risk and will increase the expected return of the equity holder. They will demand higher return for assuming high risk and therefore cost of equity will increase. In developing countries use of short term financing is on higher side than the long term financing (Booth, Aivazian, Demircug-Kunt & Maksimovic, 2001). This leads us to formulate the hypothesis that:

*H 4:* Gearing has positive impact on cost of equity.

### **Fixed Assets Backing and Cost of Equity**

Fixed Assets backing allows the firms to raise debts at cheaper rates (Rafiq, Iqbal, & Atiq, 2008). They further argued that companies can pledge their assets which are fully depreciated but still have market value. Total assets have a negative relation to the cost of equity. The cost of equity will reduce due to increase in fixed assets. As asset backing may make the business more secure and hence reduce the cost of capital. In the same vein, investor requires compensation for the higher risk if the risk cannot be diversified away due to which cost of equity will increase (Clarkson, Guedes & Thompson, 1996). Fixed asset backing makes the business less risky and hence the expected rate of return of shareholder decreases. The higher ratio of tangible assets allows the companies to borrow more at relatively cheaper rates (Rafiq, Iqbal, & Atiq, 2008). Firm with large amount of fixed assets can borrow at lower rates as compare to others because of fixed assets backing (Shah & Hijazi, 2004). They further documents that fixed asset backing make business secure and hence reduce the cost of equity. Therefore the hypothesize that:

*H 5:* Fixed asset backing has negative impact on cost of equity.

### **Long Term Debt and Cost of Equity**

The use of long term debt significantly impact earnings (Gibson, 1998). Gibson further argues that financial leverage is successful if firms earn more than it pays on borrowed funds. When the capital structure of any firm is low geared the preference shareholders and debenture holders enjoy greater degree of security (Nizam, 1999). He further documents that burden of interest payable impacts on equity earnings. Even there is positive effect of disclosure policy on cost of debt (Nikolaev & Vanlent,

2005). Increase in long term debt, increases financial risk and all the risks have to be borne by the equity holder. Their expected return increases with the increase in risk. The volatility of profits will increase the debt (Lawrence, 1990). Therefore the expected return of the equity holders increases. On the bases of above arguments it is hypothesize that:

*H 6:* Increase in the long term debt positively impact cost of equity.

### **Tax and Cost of Equity**

Tax is a form of cash outflow which ultimately reduces the profitability. The reduction in cash flow reduces the return on the equity. Therefore tax may have negative impact on cost of equity. In the same vein voluntary disclosure of firms in the financial statements leads to lower cost of capital as compare to the firms that do not disclose (Cheynel, 2013). Firm characteristics and disclosure practices decrease cost of capital (Chen, Dhaliwal & Xie, 2010). Interest on debt also creates cash inflow impact due to tax shield on interest. This phenomenon also confirms with the concept of (Modigliani & Miller, 1963) that tax reduces return to shareholders and also the cost of debt may be reduced as tax is treated as expense and deducted from the income. Uncertainty regarding future cash flows distribution creates uncertainty among investors, who require higher return for higher information risk (Paugam & Ramond, 2015). Therefore, the study hypothesizes that:

*H 7:* Tax may have negative impact on cost of equity.

### **Market Capitalization and Cost of Equity**

Market capitalization increases the value of the firm due to which cost of equity decreases. Stock market capitalization can be calculated as number of shares multiplied by market price per share. A lot of capital comes in but it is suggested that when funds depart, it departs more rapidly than it came in (Bekaert, Harvey & Lumsdaine, 2002). In the same vein market capitalization and corporate social responsibility move in the same direction. Hence corporate social responsibility reduces earnings forecasts, volatility of returns and cost of capital (Maretno, Harjoto & Jo, 2015). Bekaert, Harvey and Lumsdaine, (2002) further argued that initially inflows in equity increase the return on equity, later this effect decreases over time, which reduces the cost of equity. To investigate relationship between market capitalization and the cost of equity, the following hypothesis has been formulated:

*H 8:* Market capitalization has a negative impact on cost of equity.

## **Research Methodology**

### **Sample**

Our sample consists of firms that are listed on Pakistan Stock Exchange (PSE). We begin our sample period from January 2009 to

---

December 2014. This period substantially reduce our sample size. In this period 533 firms remained registered with PSE. The constraint of the availability of the data reduces our sample to 263 firms.

### **Data Collection**

Financial data were collected from business recorder website, company's annual reports and balance sheet analysis from State Bank of Pakistan for the period from January 2001 to December 2014. Keeping in view the importance of the study data has been collected of the firms listed on PSE. We end up with a final sample of 263 firms listed on PSE. The firms in the financial sector (capital structure of these firms is significantly different from those of other sectors to a considerable extent) has been excluded from the sample.

Table 1. *List of Sampled Firms*

S. No.	Name of Sectors	Total No. of Firms	Used in Study
1	Auto and Allied	25	21
2	Cables and Electric Goods	15	15
3	Sugar	41	34
4	Cement	21	14
5	Construction	4	3
6	Engineering	16	6
7	Glass and Ceramics	10	6
8	Leather and Tanneries	8	3
9	Textile Composite	59	28
10	Textile Weaving	25	18
11	Textile Spinning	142	32
12	Synthetic & Rayon	26	9
13	Jute	7	7
14	Fuel and energy	28	12
15	Paper and Board	15	10
16	Transport & Communication	10	9
17	Tobacco	7	3
18	Chemicals and Pharmaceuticals	38	8
19	Food and Personal Care Products	23	13
20	Vanaspati and Allied	6	6
21	Woolen	7	6
	Total	533	263

### **Theoretical Justification and Measurement of Variables**

Table 2. *Definitions and Proxies of Variable*

S. No.	Independent Variables	Definitions	Calculation/Proxies
--------	-----------------------	-------------	---------------------

1	Net Earnings' Growth	High growth commands higher cost of equity (Ashton, 1995; Fama & French, 1998; Barberis, 1998; Brigham & Ehrhardt, 2002; Gibson, 1998; Horne & Wachowicz, 1998; Gebhardt, Lee, and Swaminathan, 2001)	EBT/Total Assets
2	Reserves and Retained Earning	Internal Funds should avoid costs of issue and therefore reduce the cost of equity. This is consistent with pecking order theory. Retention of funds has negative impact on cost of equity (Krishnan & Mayers, 1996 ; Mayers, 1984	Reserve and Retained Earnings/Total Investment
3	Times interest Earned	Time interest earned negatively impact cost of equity (Brigham & Ehrhardt, 2002; Gibson, 1998; Horne & Wachowicz, 1998; Lawrence, 1990)	Income before interest and Tax/Interest Expense
4	Gearing	Gearing has positive impact on cost of equity (Brigham & Ehrhardt, 2002; Change & Rhee,1990 ; Gibson, 1998; Horne & Wachowicz, 1998; Khan & Jain, 1993)	Total Liabilities (Long term + Short term) / Equity
5	Fixed Asset Backing	Fixed asset backing negatively impact cost of Equity. (Clarkson, Guedes & Thompson, 1996; Rafiq, Iqbal, & Atiq, 2008)	Fixed assets/Total Assets
6	Long term debt	Increase in long term debt positively impact cost of equity (Gibson, 1998; Lawrence, 1990; Nizam, 1999; Dhaliwal, Heitzman and Li, 2006)	Long term debt/Total Investment
7	Tax	Tax has a negative impact on cost of equity (Modigliani & Miller, 1963)	Tax/Net profit before tax
8	Market Capitalization	Market capitalization negatively impact cost of equity (Bekaert, Harvey & Lumsdaine, 2002)	Market price per share * No. of share

### **Cost of Equity Estimates**

Our measure for cost of equity was Capital Asset Pricing Model (CAPM). However there is strong debate about the appropriateness of the method to calculate cost of equity. In the same vein Nasr, Boubakri and Cosset (2012), states that there is no strong consensus on the method to calculate cost of equity. CAPM was developed by Nobel Laureate William Sharpe's in 1960s. Other methods are also available to capture market behavior, but the advantage with the CAPM is that it is simple has real world applicability (Horne & Wachowicz, 1998). CAPM provides reality and allows illustrating certain implications about risk. It is significant for practical applications and plays major role in the field of cost of equity. CAPM was the first model developed by the financial theorists (Graham & Harvey, 2001). To calculate the cost of equity about 75% of finance professors support using the CAPM (Welch, 2008). A survey of CFOs was conducted and it indicates that 73.5% of responding financial executives uses CAPM (Graham & Harvey, 2001). CAPM, has also been tested by Shah and Butt in 2009 to calculate cost of equity. The CAPM is extremely appealing model at an intellectual level, it is logical and rational. Once someone understands and works with CAPM his reaction is usually to accept it without question (Brigham & Ehrhardt, 2002). A survey conducted by Bruner, Eades, Harris and Higgins, (1998) found that the CAPM is commonly preferred by the practitioners. Therefore the current study used CAPM to estimate cost of equity in line with (Shah & Butt, 2009).

### **The Regression Model**

Panel regression analysis has been used which is in line with (Hall, Hutchinson & Michaelas, 2004, Rafiq, Iqbal & Atiq, 2004; Shah & Hijazi, 2004).

$$Ke_{it} = \beta_0 + \beta_1 (NEG_{it}) + \beta_2 (RF_{it}) + \beta_3 (TIE_{it}) + \beta_4 (GR_{it}) + \beta_5 (FA_{it}) + \beta_6 (LD_{it}) + \beta_7 (TX_{it}) + \beta_8 (MC_{it}) + e$$

Where:

- Ke = Cost of equity,
- NEG = Net Earnings Growth
- RF = Retention of Funds
- TIE = Times Interest Earned
- GR = Gearing
- FA = Fixed Asset Backing
- LD = Long term debt
- T = Tax
- MC= Market Capitalization



e = Error term

The correlation among the study variables are shown in Table 4. Net earnings' growth is negatively correlated with cost of equity at value of -0.018 which is against the findings of (Ashton, 1995; Fama & French, 1998; Brigham & Ehrhardt, 2002; Gibson, 1998; Horne & Wachowicz, 1998). According to their studies net earnings' growth is positively correlated with the cost of equity which means increase in net earnings stimulates the expectations of the shareholders which increase the cost of equity. Correlation is significant between cost of equity and reserves and retained earnings at value of .055(\*), retention of funds also had significant correlation with cost of equity. The hypothesis that reserves and retained earnings has negative impact on cost of equity as suggested by (Krishnan & Mayer, 1996; Mayers) 1984 is not accepted although reserves and retained earnings have significant correlation with cost of equity. Times interest earned is positively correlated with cost of equity at value of 0.009 which is against the results of the studies conducted by (Brigham & Ehrhardt, 2002; Gibson, 1998; Horne & Wachowicz, 1998; Lawrence, 1990). Although positive correlation is not significant between times interest earned and cost of equity. Gearing is negatively correlated with cost of equity at value of -.046. Hence it is inferred that gearing negatively impact cost of equity although not very significantly which is contradicts the results of the studies conducted by (Brigham & Ehrhardt, 2002; Gibson, 1998; Horne & Wachowicz, 1998; Khan & Jain, 1993). Fixed asset backing has a significant and positive correlation with cost of equity at value of 0.090\*\*. Fixed asset backing does not reduce the cost of equity instead fixed asset backing increase the cost of equity. The results showed that fixed asset backing has positive impact on cost of equity instead of negative against the study conducted by (Clarkson, Guedes & Thompson, 1996).

Long term debt is positively correlated with cost of equity at value of 0.038. Correlation results are in line with the hypothesis that long term debt has a positive impact on cost of equity. The positive relation of long term debts with cost of equity is also supported by the studies conducted by (Gibson, 1998; Lawrence, 1990). The study conducted by Modigliani and Miller (1963) proved that tax has negative impact on cost of equity. The current study showed that tax has positively correlation with cost of equity at value of 0.019 which means increase in tax will increase the cost of equity. Market capitalization is negatively correlated with cost of equity. There is significant correlation between market capitalization and cost of equity at value of -0.213\*\*. Which means increase in the value of the firm will decrease the cost of equity and decrease in the value of the firm will increase the cost of equity. Therefore the hypothesis that market capitalization has a negative impact on cost of equity is accepted. The results are in line with the study conducted by (Bekaert, Harvey and Lumsdaine, 2002).

**Table 4. Correlation between Cost of Equity with Independent Variables**

	Ke	NEG	RRE	NFA	TIE	G	FAB	L	T	MC
Ke	1									
NEG	-.018	1								
RRE	.055(*)	.006	1							
TIE	.009	.123(**)	.004	-.005	1					
G	-.046	-.003	-.001	.006	-.001	1				
FAB	.090(**)	.146(**)	.024	-.005	.089(**)	.007	1			
L	.038	-.024	.026	-.001	-.039	.037	.191(**)	1		
T	.019	-.005	.004	.005	.002	.008	.018	-.006	1	
MC	.213(**)	-.060(*)	.039	.047(*)	.158(**)	.009	.254(**)	.167(**)	.020	1

\* Correlation is significant at the 0.05 level (1-tailed).

\*\* Correlation is significant at the 0.01 level (1-tailed).

**Table 3. Regression Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.234(a)	.055	.048	6.30603

a Predictors: (Constant), MC, G, T, RRE, NFA, NEG, L, TIE, FAB

### Regression Analysis

Regression results among the study variables are shown in Table 5. The results prove that net earnings’ growth has a beta value of -0.032 with a negative t value of -1.126, it represents a negative relationship, although not very significant, which means an increase in earnings will reduce the cost of equity. The studies conducted by (Ashton, 1995; Fama & French, 1998; Brigham & Ehrhardt, 2002; Gibson, 1998) proved that an increase in net earnings will increase the cost of equity. Regarding the cost of equity and reserves and retained earnings, the t value of retention of funds is 1.705, and the beta value is .047. So the hypothesis that retention of funds has a negative impact on the cost of equity as suggested by (Mayers, 1984) is not accepted.

Times interest earned has a t value of 1.745, with a beta value of 0.049, which is against the results of the studies conducted by (Brigham & Ehrhardt, 2002; Gibson, 1998; Horne & Wachowicz, 1998; Lawrence, 1990). Gearing has a negative t value of -1.744, and a negative beta value of -0.048. Hence, it is inferred that gearing negatively impacts the cost of equity, which is against the studies conducted by (Brigham & Ehrhardt, 2002; Gibson, 1998; Horne & Wachowicz, 1998; Khan & Jain, 1993). The studies regarding determinants of the cost of equity have been conducted in the developed countries where the long-term debt has a specific percentage in the capital structure. In Pakistan, banks do not allow long-term debt (SBP annual reports) because of these results of this study, which may not be

according to the results of the studies conducted in the developed countries.

Fixed asset backing has t value of 1.274 and beta value of .037 therefore fixed asset backing has positive impact on cost of equity instead of negative against the literature. Fixed assets are totally financed by equity in Pakistan and in the developed countries they are also finance by long term debts as well; this might be the reason for the results which are against the results of the studies conducted by (Clarkson *et al.*, 1996). Long term debt has -.139 t values along with beta of -0.004. Tax has t value of 0.786, and beta value is 0.022. Pakistan economy is undocumented and therefore taxation system is mainly depend on proper documentation (Faruqi, 2011), which might be the reason for the differences in results with respect to the studies conducted in the developed countries. Market capitalization has t value of -7.259, with beta value of -0.212. Therefore, it is established that with the increase in the value of the firm the cost of equity will be decreased and vice versa. The results are in line with (Bekaert *et al.*, 2002). Hypothesis that market capitalization has a negative impact on cost of equity is accepted.

Table 5. Main Effect of IV's on Cost of Equity

Independent Variables	Coefficients	t-statistics
Intercept	20.12995	12.446
Net Earnings' Growth (NEG)	-.032	-1.126
Reserves and Retained Earnings (RRE)	.047	1.705
Times Interest Earned (TIE)	.049	1.745
Gearing (G)	-.048	-1.744
Fixed Asset Backing (FAB)	.037	1.274
Long Term Debt (LTD)	-.004	-.139
Tax (T)	.022	.786
Market Capitalization (MC)	-.212	-7.259
R Square	.055	
Adjusted R Square	.048	

### Industry Wise Cost of Equity

Cost of equity in different industries has been shown in Table 7. Minimum cost of equity is in Auto and allied industry which is 11.54% and highest in construction industry which is 16.78% in line with the findings of (Pointon and Omran, 2004). Their study in Egypt also reported high cost of equity in construction industry, same stands true with respect to Pakistan. Cost of equity in cables & electric goods, sugar, cement, glass& ceramics, textile composite, synthetic & Rayon, jute, fuel & energy, paper & board, transport & communication, chemical & pharmaceuticals, food & personal care products, vanaspati & allied and woolen is ranging between 13.02% to 13.94. In tobacco industry cost of

equity is 12.06527 percent. Cost of equity is 15.28% in Leather, 14% in tanneries, 14.21% in textile spinning and textile weaving. The average cost of equity for all the industries in Pakistan is around 13.65 percent which is in line with the finding of (Estrada, 2000) in emerging markets.

### **Conclusion**

We find strong evidence that market capitalization has significant impact on cost of equity. The results of the study were counter to expectation and proves that net earnings growth, retention of funds, times interest earned, gearing, fixed asset backing, long term debt and tax have no impact on cost of equity. This may be because of the corporate sector in Pakistan has been dominated by the family owned businesses with non professional board of directors selected on the bases of links (Shah & Butt, 2009). Secondly at present our empirical and theoretical understanding of the cost of equity is still early with respect to Pakistan. We caveat our results to some extent but current study still provides solution for the deficiency in the existing literature by studying the determinants of cost of equity in Pakistan.

### **Contribution of the Study**

Our study contributes to economic growth measurement by providing real results of cost of equity in different sectors of Pakistan. No-doubt net income takes into account the cost of debt, which is presented in income statement as interest expense, but does not represents the cost of equity, therefore firms making a net profit can be still unprofitable in an economic sense if the profit is less than their cost of equity (Brigham & Houston, 2004). Current study provides first-hand information to domestic and foreign investors regarding cost of doing business in different industrial sectors of Pakistan. Global observation reveals the fact that expected return by the equity holders is different from industry due to the availability of investing opportunities. Finally social and cultural aspects may be viewed as the determinants of cost of equity.

### **Future Directions**

Factors affecting cost of equity is very important area of research as after determining the factors that effects cost of equity these factors may be controlled to minimize the cost of equity that may contribute towards maximization of shareholder wealth. So in the future research may be conducted on how determinants of capital structure may differ from sector to sector or industry to industry in Pakistan. This is because literature suggests that determinants of cost of equity may vary from industry to industry.

References

- Ashton, D. J. (1995). The cost of equity capital and a generalisation of the dividend growth model. *Accounting and Business Research*, 26(1), 3-17.
- Barry, C. B., Peavy Jr, J. W., & Rodriguez, M. (1998). Performance characteristics of emerging capital markets. *Financial Analysts Journal*, 54(1), 72-80.
- Bazley, M., & Hancock, P. (2004). Contemporary accounting. *Melbourne, Australia: Cengage Learning Australia Pty Limited*.
- Bekaert, G., Harvey, C. R., & Lumsdaine, R. L. (2002). The dynamics of emerging market equity flows. *Journal of International Money and Finance*, 21(3), 295-350
- Bhatnagar, V. K., Kumari, M., & Sharma, N. (2015). Impact of Capital Structure & Cost of Capital on Shareholders' Wealth Maximization-A Study of BSE Listed Companies in India. *Chanakya International Journal of Business Research*, 1(1), 28-36.
- Bilal, A. R., Khan, A. A., Akoorie, M. E. M. (2016). Constraints to growth: a cross country analysis of Chinese, Indian and Pakistani SMEs. *Chinese Management Studies*, 10(2), 365-386.
- Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structure in developing countries. *Journal of Finance*, 56(1), 87-130.
- Botosan, C. A., Plumlee, M. A., & Xie, Y. (2004). The role of information precision in determining the cost of equity capital. *Review of Accounting Studies*, 9(2-3), 233-259.
- Brennan, M. J., Huh, S. W., & Subrahmanyam, A. (2015). Asymmetric effects of informed trading on the cost of equity capital. *Management Science*.
- Brigham, E. F., & Ehrhardt, M. C. (2002). Financial management theory and practice. *South-Western, Thomson Learning, Inc*.
- Brigham, E. F., & Houston, J. F. (2004). Fundamentals of financial management. *Thomson South-Western*.
- Bruner, R. F., Eades, K., Harris, R., & Higgins, R. (1998). Best practices in estimating the cost of capital: survey and synthesis. *Financial Practice and Education*, 8, 13-28.
- Change, R. P. & Rhee, S. G. (1990). The impact of personal taxes on corporate dividend policy and capital structure decisions. *Financial Management*, 19(2), 21-31.
- Chen, Z., Dhaliwal, D. S., & Xie, H. (2010). Regulation fair disclosure and the cost of equity capital. *Review of Accounting Studies*, 15(1), 106-144.
- Cheyne, E. (2013). A theory of voluntary disclosure and cost of capital. *Review of Accounting Studies*, 18(4), 987-1020.
- Clarkson, P., Guedes, J., & Thompson, R. (1996) On the Diversification, Observability, and Measurement of Estimation Risk, *Journal of Financial and Quantitative Analysis*, 31, 69-84.
- Clarkson, P., Guedes, J., & Thompson, R. (1996). On the diversification, observability, and measurement of estimation risk. *Journal of Financial and Quantitative Analysis*, 31(01), 69-84.
- Clinch, G., & Verrecchia, R. E. (2015). Voluntary disclosure and the cost of capital. *Australian Journal of Management*, 40(2), 201-223.
- Core, J. E., Hail, L., & Verdi, R. S. (2015). Mandatory disclosure quality, inside ownership, and cost of capital. *European Accounting Review*, 24(1), 1-29.

- Da, Z., Guo, R. J., & Jagannathan, R. (2012). CAPM for estimating the cost of equity capital: Interpreting the empirical evidence. *Journal of Financial Economics*, 103(1), 204-220.
- Drobtetz, W., & Fix, R. (2003). *What are the determinants of the capital structure? Some evidence for Switzerland*. Working Paper No. 4/03., Department of Finance, University of Basel, Basel, Switzerland.
- Espinosa, M., & Trombetta, M. (2007). Disclosure interactions and the cost of equity capital: evidence from the Spanish continuous market. *Journal of Business Finance & Accounting*, 34(9-10), 1371-1392.
- Estrada, J. (2001). The cost of equity in emerging markets: A downside risk approach (II). *Emerging Markets Quarterly*, 5, 63-72.
- Fama, E. F., & French, K. R. (1998). Taxes, financing decisions, and firm value. *The Journal of Finance*, 53(3), 819-843.
- Faruqi, S. (2011). Financial system and economic development-Pakistan. *Lahore School of Economics*.
- Gelb, D. S., & Zarowin, P. (2002). Corporate disclosure policy and the informativeness of stock prices. *Review of Accounting Studies*, 7(1), 33-52.
- Gibson, C. H. (1998). Financial statement analysis, using financial accounting information. *New Jersey, NJ: Prentice-Hall, Inc.*
- Graham, J. R. & Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics* 60(2), 187-243.
- Hall, C. G., Hutchinson, J. P., & Michaelas (2004). Determinants of capital structure of european SMEs. *Journal of Business, Finance, and Accounting*, 31(5-6), 711-728.
- Harjoto, M. A., & Jo, H. (2015). Legal vs. normative CSR: Differential impact on analyst dispersion, stock return volatility, cost of capital, and firm value. *Journal of Business Ethics*, 128(1), 1-20.
- Horne, J. C. V., & Wachowicz, J. M. (1998). Fundamentals of financial management. *New Jersey, NJ: Prentice-Hall, Inc.*
- Hribar, P., & Jenkins, N. T. (2004). The effect of accounting restatements on earnings revisions and the estimated cost of capital. *Review of accounting studies*, 9(2-3), 337-356.
- Khan, M. Y. & Jain, P. K. (1993). Theory and problems of financial management. *Mcgraw-Hill, New Delhi, India: Publishing Company Limited*.
- Lambert, R. A., Leuz, C., & Verrecchia, R. E. (2012). Information asymmetry, information precision, and the cost of capital. *Review of Finance*, 16(1), 1-29.
- Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of accounting research*, 45(2), 385-420.
- Lawrence, S. C. (1990). Advanced financial accounting. *London, UK: Longman Group UK Limited*.
- Mayers, S. C. (1984). The capital structure puzzle. *Journal of Finance*, 39(3), 575-592.
- Mayers, S.C., & Majluf, N. (1984). Corporate financing and investment decisions when firms have information investors do not have. *Journal of Financial Economics*, 13(2), 187-222.

- Modigliani, F. & Miller, M. H. (1958). The cost of capital, corporation finance and theory of investment. *American Economic Review*, 48(3), 261-297.
- Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital a correction. *American Economic Review*, 53(3), 433-443.
- Nasr, H., Boubakri, N. & Cosset, J. C. (2012). The political determinants of the cost of equity: Evidence from newly privatized firms. *Journal of Accounting Research*, 50(3), 605-646.
- Nikolaev, V., & Van Lent, L. (2005). The endogeneity bias in the relation between cost-of-debt capital and corporate disclosure policy. *European Accounting Review*, 14(4), 677-724.
- Omran, M., & Pointon, J. (2004). The determinants of the cost of capital by industry within an emerging economy: Evidence from Egypt. *International Journal of Business*, 9(3).
- Paugam, L., & Ramond, O. (2015). Effect of Impairment-Testing Disclosures on the Cost of Equity Capital. *Journal of Business Finance & Accounting*, 42(5-6), 583-618.
- Pointon, J. & Omran. M. (2004). The determinants of the cost of capital by industry within an emerging economy: Evidence from Egypt, *International Journal of Business*, 9(3), 237-258.
- Rafiq M., Iqbal, A., & Atiq, M. (2008). The determinants of capital structure of chemical industry in Pakistan. *The Lahore Journal of economics*, 13(1), 139-158.
- Ross, S.A. (1977). The determination of financial structure: The incentive signaling approach. *Bell Journal of Economics*, 8(1), 23-40.
- Shah, A., & Hijazi, T. (2004). The determinants of capital structure of stock exchange- listed non-financial firms in Pakistan. *The Pakistan Development Review*, 43(4), 605-618.
- Shah, S. Z. A., & Butt, S.A. (2009). The impact of corporate governance on the cost of equity: Empirical evidence from Pakistani listed companies. *The Lahore Journal of Economics*, 14(1), 139-171.
- Welch, I. (2008). The consensus estimate for the equity premium by academic financial economists. *Working paper, Brown University, Rhode Island, US*.
- Xu, S., Liu, D., & Huang, J. (2015). Corporate social responsibility, the cost of equity capital and ownership structure: An analysis of Chinese listed firms. *Australian Journal of Management*, 40(2), 245-276.

Appendix  
The Cost of Equity in Different Industries

S. No.	Name of Sector	Cost of Equity
1	Auto and Allied	11.54126
2	Cables and Electric Goods	13.28045
3	Sugar	13.76883
4	Cement	13.28442
5	Construction	16.78705
6	Engineering	13.21839
7	Glass and Ceramics	13.88871
8	Leather and Tanneries	15.28084
9	Textile Composite	13.66655

10	Textile Weaving	14.21858
11	Textile Spinning	14.00763
12	Synthetic & Rayon	13.94723
13	Jute	13.36964
14	Fuel and energy	13.72735
15	Paper and Board	13.46615
16	Transport & Communication	13.61271
17	Tobacco	12.06527
18	Chemicals and Pharmaceuticals	13.02964
19	Food and Personal Care Products	13.32071
20	Vanaspati and Allied	13.89099
21	Woolen	13.42057

---