Impact of Financing Methods on Risk and Return: Evidence from Non-life Insurance Sector of Pakistan

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Abstract

This study investigates the impact of financing methods on risk and return of non life insurance companies in Pakistan for the period 2006-2009. Financing method is operationalized by capital ratio i.e. total equity to assets ratio while risk and return are measured by coefficient of variation of return on equity (ROE) and ROE respectively. T-test is used which is a suitable test that compares the risk and return of the two groups of companies. Group 1 consists of companies using more equity financing and group 2 consists of companies using more debt financing. Findings indicate that there is no significant difference between the return on equity (ROE) of the two groups at the 5 % significance level but the difference is significant at the 10% significance level. Further, there is no significant difference between the risks of the two groups. Overall, there is higher ROE and lower risk of the group 1 (using financing method of more equity) than the group 2 (using financing method of more debt). It is suggested that the non-life insurance companies of Pakistan should use more equity financing in order to enhance their return while minimizing risk.

Keywords: Financing method, Return on equity, Risk, Equity, Debt, Non-life insurance companies

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1. Introduction

"Insurance is a form of risk management, used to hedge against the risk of a contingent loss. It involves the transfer of the risk of potential loss from one entity to another in exchange for a risk premium (Pakistan financial sector assessment review, 2004). Given this role, the Insurance sector fosters financial stability by enabling economic agents to undertake various transactions with the facility of transfer and dispersion of risks. Insurance industry provides several economic benefits. The Insurance industry plays an important role in a growing economy as it indemnify the risks faced by companies as well as make institutional investments. It contributes towards employment generation; strengthen linkages with other sectors in promoting growth and stability, and creating a sizeable impact on the national income of a country (Pakistan financial sector assessment review, 2004).

Financing method can be either equity or debt in the capital structure (CS) of a firm through which assets are financed. Risk and return are two important concepts connected with the choice of financing method (Afrasiabi and Ahmadinia, 2011). The shareholders wealth maximization goal of financial management indicates that the firm should maintain an optimal capital structure that maximize the firm value and minimize the cost of capital (Weston & Brigham, 1992). All businesses face some kind of uncertainty and to minimize this uncertainty, they acquire the services of non-life insurance companies. If these companies stop providing their services then business firms may stop working which results in loss of jobs by workers and unavailability of products that ultimately effect country economic development. To satisfy their claims in case of loss to

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businesses or damage to some property, non-life insurance companies besides premiums obtain funds by issuing equity or borrowing money (debt). Mixture of debt and equity is called capital structure.

The funds generated through capital structure are invested by the firm in assets which are used to generate revenues. If these assets are efficiently used then the firm will earn profit which is the basic purpose of any business. The value of a firm can be judged by its risk and return and the goal of every firm is to earn maximum return with minimum risk. The risk and return of a company is affected by the way the firm is financed by debt or equity.

1.1. Problem statement

Besides premium non-life insurance companies also issues debts and equity to meet their financial needs. It is the goal of every firm to earn maximum return by taking minimum risk so which financing methods i.e. more debt or more equity can best achieve this goal. This issue will be addressed in this study.

The objective of this study is to empirically examine the effect of financing method (i.e. high equity or high debt in capital structure) on risk and return of non-life insurance companies in Pakistan.

The remaining paper is structured as: second section provides the relevant literature. Third section discusses the methodology. Fourth and fifth section provides results and discussion respectively. Sixth section concludes the paper and suggests recommendations.

2. Literature review

Pioneer work in the area of CS and profitability can be traced back to Modigliani and Miller (1958). They argued that with no taxes and no market imperfections, no bankruptcy costs, the firm value and

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the capital cost are independent of its CS i.e. no matter what is the mix of financing the firm value and the COC remains the same. Modigliani and Miller (1963) review their previous paper and include taxes in their model. They argued that the interest payments on debt is tax-deductible expense which reduce the amount of tax to pay, so the optimal capital structure of the firm is 100% i.e. there is no equity in the firm CS. This means that the firm's worth increases as debts increases.

However, the assumptions of Modigliani and Miller do not hold in the real world situation but it motivates many researchers to study the relationship between CS and profitability. For example, Jensen and Meckling (1976) presented agency costs theory. They have developed the well-known agency costs hypothesis i.e. high leverage decreases the agency costs of outside equity and raises firm value by motivating managers to act in the best interest of stockholders. The researchers further state that ownership and control separation in firms may result in manager's inefficiency and they may fail to maximize the firm value. Jensen and Meckling (1976) argued that high leverage reduces agency costs because managers have the threat of liquidation from creditors and they work efficiently which ultimately results in the firm value maximization.

Similarly, the other two dominant theories, the pecking-order and trade-off theory were developed. The former theory presented by Myers and Majluf (1984) suggest that firms will first rely on an internal source of fund such as retained earnings, in case of no information asymmetry, then they will go for debt and lastly they will issue shares for further funding requirements. Thus, according to the packing order theory, profitable firms that retained most of their

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earnings are expected to have less debt in their CS. Consequently, negative association could be expected between debt level and profitability. The trade-off theory which combine tax concept given by Modigliani and Miller (1963), bankruptcy costs concept given by Baxter (1976) and agency costs concept given by Jensen and Meckling (1976) can be used to determine the optimal CS. When the debt level increases, the bankruptcy and agency costs eventually become significant. The point at which the marginal bankruptcy/agency costs equal the marginal tax-shield benefits, the share value is maximized and cost of capital is minimized. At this point there is an optimal CS. Thus, accordingly trade-off theory (as reported by Ebaid, 2009), firms with larger profits have larger income to shield and thus should borrow more to save tax. Consequently, a positive relationship between CS and profitability could be expected.

Afrasiabi and Ahmadinia (2011) conduct a study on capital structure of listed companies on Tehran stock exchange for the period 2006 to 2009. Findings indicate that companies financed through the issuance of stock have less systematic risk than companies financed through debt. Findings further indicates that companies financed by the issuance of stock obtain more return and less risk in comparison with the companies having more leverage in their capital structure. Use of more debt in capital structure provide tax benefits i.e. interest is tax deductible however, it increases the risk of the firm specially bankruptcy risk. Brigham and Houston (2008) stated that using more debt will raise the risk borne by stockholders. However; using more debt generally increases the expected return on stock. Raheman, Zulfiqar, and Mustafa (2007) examined the relationship between capital structure and profitability of 94 non financial listed firms on

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Islamabad stock exchange for the period of 1994-2004. Their results indicate that the capital structure has a significant effect on the profitability of these firms. Companies having high debt experience lower profits and vice versa. Sunder and Myers (1999) explained that the most profitable firms in many industries often have the lowest debt ratio. When debt increases, fixed claim on debt increases risk of stockholders residual claim and so stockholders increases their return on equity. The increase in debt also increases the risk of the firm especially financial risk. Huo and Kwansa (1994) observed that high leveraged companies i.e. having more debt in the capital structure experience larger variations in their earnings and hence higher risk. Gu (1993) (as reported by Yoon & Jang, 2005) showed that the more the company uses debt, the greater its financial risk. Prasad, Bruton, and Merikas (1997) analyzed the sample of 592 firms for the period 1969-1986. Their results show that financial leverage is negatively related with the firm business risk. Similarly, Dangl and Zechner (2004) examine the effect of dynamic capital structure adjustments on credit risk. They found that efficient use of debt in the firm capital structure reduces the credit risk.

Chen, Chen, Liao and Chen (2009) studied the influence of capital structure on operational risk and profitability of insurance industry in Taiwan. Structural equation modeling, which involves factor-analysis and path-analysis, is used. Findings show that the capital structure exerts a negative and significant effect on operational risk meaning that the higher the equity to assets ratio, the lower will be the risk. However, high equity ratio leads to lower profitability (return).

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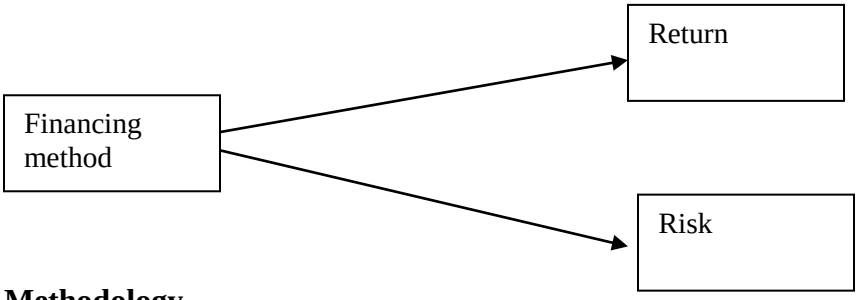
Michaelsen and Goshay (1967), Hammond et al. (1976), and Harrington and Nelson (1986) (as stated by Cummins & Sommer, 1996) all find some degree of support for the hypothesis that insurers with higher portfolio risk operate with lower leverage ratios.

Malik (2011) examined the determinants of profitability of 35 listed life and non-life insurance companies of Pakistan which cover the period of 2005- 2009. Author found that the volume of capital (total equity capital) is significantly and positively related to profitability. Loss ratio and leverage ratio showed negative but significant relationship with profitability.

The following research framework has been proposed on the basis of the related literature. The financing method can be debt or equity.



3. Methodology

3.1. Sample and data

The sample consists of 10 non-life insurance companies of Pakistan. These companies are divided into two groups each having 5 companies. Group 1 consists of those companies which uses more than 50% equity financing while group 2 consist of companies using more than 50% debt financing. The division in two groups is made in order to see the effect of particular financing method on risk and return. Table 1 list these two groups of companies.

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Table 1. High equity and high debt companies

Group 1 (High equity companies)	Group 2 (High debt companies)
1. Security general insurance company limited 2. International general insurance corporation of Pakistan 3. Excell insurance company limited 4. Pakistan general insurance company limited 5. East west insurance company limited	1. Universal insurance company limited 2. Shaheen insurance company limited 3. Reliance insurance company limited 4. New jubilee insurance company limited 5. Askari general insurance company limited

The data used in this study were obtained from the publication of state bank of Pakistan named financial statement analysis of the financial sector 2006-2009.

3.2. Variables

3.2.1. Independent variables

Independent variables of this study are equity financing and debt financing. Capital ratio i.e., totals equity to assets ratio is used to operationalize the financing method. The high value of this ratio indicates the use of more equity financing and its lower value indicates more debt financing. If this ratio is greater than 50% or 0.50 then the company is considered to include in the group 1 and if it is less than 50% or 0.50 then the company be included in group 2.

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3.2.2. Dependent variables

The dependent variables include risk and return. Risk in this study is operationalized by the coefficient of variation (CV) of return on equity (ROE). Coefficient of variation of ROE is calculated as shown below:

$$CV = \frac{\text{Standard deviation of ROE}}{\text{Mean of ROE}} \times 100$$

The greater value of CV of ROE indicates higher risk. This measure of risk is used by several researchers (Pandya & Rao, 1998; Afza, Slahudin, & Nazir, 2008).

The second dependent variable return is operationalized by return on equity (ROE). ROE is calculated as the ratio of profit after taxation to total shareholders equity. Higher value of it indicates better performance and efficiency in using owners fund to generate profits. This measure is also commonly used by researchers (Pandya & Rao, 1998; Afza, Slahudin, & Nazir, 2008; Abor, 2005).

3.3. Hypotheses

The study uses two main hypotheses in order to see the effect of financing methods on risk and return of the non-life insurance companies of Pakistan.

First hypothesis;

Ho: There is no significant difference between the ROE of the two groups of companies

Ha: There is significant difference between the ROE of the two groups of companies

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Second hypothesis;

Ho: There is no significant difference between the risks of the two groups of companies

Ha: There is significant difference between the risks of the two groups of companies

3.4. Test used

T-statistical test is used in this study as the main purpose of this study is to compare the risks of the two group of companies and also compare their returns. t-test is a suitable test for this purpose. The researcher use Microsoft excel program for running t-test on the company's data.

4. Results

4.1. Descriptive statistics

Table 2 contains descriptive statistics of the variables in order to look at their nature. Both groups have five companies so N=5. The mean capital ratio of high equity group (Group 1) and high debt group (Group 2) is 78.45 and 32.86 respectively which clearly shows that a high percentage of assets of group 1 is financed by equity as compared to group 2 which have a high percentage of assets financed by debt. Minimum and maximum values of 59.16 and 94.87 are recorded for group 1 and 24.65 and 41.56 recorded for group 2 respectively.

Average ROE for group 1 and group 2 is 32.50 and 11.51 respectively which shows that group 1 performs better than group 2 in terms of profitability. ROE minimum and maximum values of 8.82 and 65.94 are recorded for group 1 and 4.50 and 19.22 recorded for group 2 respectively.

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Average risk of 1.25 for group 1 and 2.20 for group 2 is observed which shows that the earnings of group 2 is more riskier and it is because of more use of debt financing that carries with it fixed interest charges. Minimum and maximum value of risk in group 1 is 0.78 and 1.81 and in group 2 it is 0.70 and 5.98 respectively.

Table 2. Descriptive statistics of the variables

Variables	**Mean**	**Standard deviation**	**Minimum**	**Maximum**
Group 1 (N=5)				
Capital ratio	78.45	12.95	59.16	94.87
ROE	32.50	21.16	8.82	65.94
Risk	1.25	0.41	0.78	1.81
Group 2 (N=5)				
Capital ratio	32.86	7.57	24.65	41.56
ROE	11.51	5.47	4.50	19.22
Risk	2.20	2.15	0.70	5.98

Note. ROE=Return on equity

4.2. First hypothesis

Table 3 shows the results for the first hypothesis. By using t-test, p-value of 0.06 is obtained. At the 5% significance level, the null hypothesis is not rejected as the p-value 0.06 is greater than the significance level 0.05. Results are not significant at the 5% significance level meaning that average ROE of 32.50% for group 1 cannot be interpreted as significantly higher than average ROE of 11.51% for group 2.

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However, at the significance level of 10%, the null hypothesis is rejected and the alternative hypothesis is accepted as the p-value 0.06 is less than the significance level 10%. It means that the average ROE of group 1 is significantly higher than the average ROE of group 2. As a result, there is significant impact of the financing method (more equity or more debt) on the return of the companies. Companies financed through more equity earn more return than companies financed through more debt.

Table 3. Comparison of average ROE of the two groups

	Financing type: high equity=group 1, high debt=group 2								
	Mean group 2		t-value	df	n group		STD group		p-value
Variable	1	2			1	2	1	2	
ROE %	32.50	11.51	2.15	8	5	5	21.16	5.47	0.06*

Note. STD = Standard deviation.
*Significant at 10% level

4.3. Second hypothesis

Table 4 shows the results of the second hypothesis. At both 5% and 10% significance level, the null hypothesis is do not rejected as the p-value 0.36 is higher than the two significance levels 0.05 and 0.10. It indicates that there is no significant difference between the risks of the two groups of companies. Therefore, the financing method does not have significant impact on the risks of the companies. Even though the average risk 1.25 of group 1 is lower

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than the average risk 2.20 of group 2 but it is not significant difference.

Table 4. Comparison of risks of the two groups

	Financing type: high equity=group 1, high debt=group 2								
	Mean group		t-value	df	n group		STD group1		p-value
Variable	1	2			1	2	1	2	
Risk	1.25	2.20	-0.97	8	5	5	0.41	2.15	0.36

Note. STD = Standard deviation.

5. Discussion

In the first hypothesis, it is found that that there is no significant difference between the average ROE of the two groups at the 5% significance level however the average ROE of group 1 (more equity financing) is greater than the average ROE of group 2 (more debt financing). At the 10% significance level, the difference is significant between average ROE of the two groups. The justification for higher average ROE of group 1 (using more equity financing) is that it avoids certain costs associated with debt. Certain costs specially fixed interest charges, financial distress costs is associated with debt that negatively affects ROE. This finding is partially consistent with the finding of Afrasiabi and Ahmadinia (2011), Sunder and Myers (1999), Raheman, Zulfiqar, and Mustafa (2007). This finding is however in contrast to the well known pecking order theory (Myers and Majluf, 1984) which suggests that the company should use debt before equity.

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Results of the second hypothesis shows that there is no significant difference between the risks of the two groups of companies at both 5% and 10% significance level however, the risk 1.25 of the group 1 (having high equity) is lower than the risk 2.20 of the group 2 (having high debt in capital structure). Justification for lower risk of the group 1 is that having more debt in capital structure (as the case in this study with group 2) increases the chances of bankruptcy as the company may default on the debts which increase the overall risk of the company. Having high equity in capital structure minimize chances of the bankruptcy and hence minimize the overall risk of the company. This finding is consistent with the finding of Afrasiabi and Ahmadinia (2011), Huo and Kwansa (1994).

6. Conclusion and recommendations

This study investigates the impact of financing method on risk and return of non life insurance companies of Pakistan for the period 2006-2009. Financing method is operationalized by capital ratio i.e. total equity to assets ratio while risk and return are measured by coefficient of variation of return on equity (ROE) and ROE respectively. T-test is used which is a suitable test that compares the risk and return of the two groups of companies. The overall conclusion drawn is that companies having high equity in capital structure bear less risk i.e. their coefficient of variation (which is a relative measure of risk) is low, earns more return in terms of return on equity which shows how much owners are earning on their investment, and are more profitable than companies using more debt in capital structure. Non life insurance companies of Pakistan which uses more equity (preferred and common stock financing) perform well both on the risk side and return side. High debt in capital

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structure increases the chances of default and bankruptcy which raises the overall risk and reduces the return of companies. High debt also results in certain distress cost which is to be handled very carefully.

On the basis of the findings, it is recommended that the non-life insurance companies of Pakistan should use the financing method of more equity in capital structure in order to improve their performance. This will decrease their overall risk level and will also enhance profitability which is the ultimate goal of every business organization.

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