THE DETERMINANTS OF CAPITAL STRUCTURE

The Determinants of Capital Structure: A Case from Pakistan Textile Sector (Spinning Units)

Pervaiz Akhtar
National University Of Modern Languages, Islamabad

Muhammad Husnain
University Of Agriculture Faisalabad

Muhammad Ahsan Mukhtar
Muhammad Ali Jinnah University, Islamabad
Abstract

Capital structure decisions are among the most important and crucial decisions for any business because of their effect on value and cost of the company. In this paper we have discussed the determinants of capital structure of Pakistani firms. The sample comprised 30 Pakistani textile sector companies. Size, growth, financial cost, profitability, and tangibility are used as independent variables, while leverage is the dependent variable. For analysis purpose descriptive statistics, correlation and regression analysis are used. The results imply that the spinning sector companies are small in size and capitalization so these companies prefer internal financing as compare to external financing.

Keywords: Capital Structure, Leverage, Pakistan Textile Sector, Spinning Sector.
Introduction


In Recent Years, At International Level, Several Authors On Capital Structure Have Proposed To Identify And Explain Many Great Potential Attributes That Influence The Financial Decision In Selecting The Right Debt To Equity Variations Across A Firm’s Capital Structure.


Theories Have Been Developed To Explain The Right Debt And Equity Combination For A Firm To Adapt In Order To Achieve The Optimum Level Of Capital Mix. Traditional Theory Is In Favour Of Borrowing More For Financing. This Is Mainly Because Of The Tax Advantage That Is Enjoyed By Debt Whilst Equity Is Not. This Makes Equity More Expensive To Consider. According To Myers And Majluf (1984), Managers Are Reluctant In The Issuing Of Equity Because Of The Unwillingness Of Investors As Equity Yields A Return That Is Counted To The Investors Of Scarce Resource As Their Opportunity Cost, Thus The Issuing Of Equity Should Only Occur If Equity Is Moderately Priced Or Overpriced.


In General, This Study Covers Each And Every Aspect Of The Subject But Specifically It Is Related To Capital Structure Of Textile Sector Companies (Spinning Firms) Listed In Karachi
Stock Exchange And Their Financing Decision Making. It Explores A Variety Of Factors That Influence The Determinants Of Capital Structure And Manipulate The Financial Decision Taken By The Manager As Well The Success Or The Failure To These Decisions.


Size, Growth Rate, Financial Cost, Profitability And Tangibility Are Used As Independent Variables, While Leverage Is The Dependent Variable. For Analysis Purpose Panel Data Analysis, Correlation And Regression Analysis Are Used.

1.2 Objectives Of The Study

- To Identify The Determinants Of Capital Structure In The Different Sectors Of Pakistan Economy.
- To Analyze Which Are The Main Determinants That Influence The Financing Decision In The Choice Of Capital Structure In Pakistan Economy?
- To Explain The Relationship Between Leverage And The Determinants Of Capital Structure In Pakistan Economy.
- To Suggest Some Determinants Which Are Of Considerable Attention For Capital Structure Decision Pakistan Economy?
1.3 Significance Of The Study

This Study Will Try To Identify And Analyze The Determinants Of Capital Structure In A Systematic Way. Study Will Provide The Applicable And Practical Teaching To Anyone Who Wishes To Understand The Topic. In General This Study Will Cover Many Aspects Of The Topic But Specifically It Will Try To Determine The Capital Structure Of The Spinning Sector Firms Listed On Karachi Stock Exchange. This Study Will Help The Managers To Take The Financing Decision For Their Firms. The Creditors Can Also Take The Benefit To Minimize Their Risk, In Funding A Specific Sector Firms.

2.0 Literature Review

The Objective Of This Chapter Is To Examine Existing Research On Capital Structure And Its Determinants With Relative Emphasis On The Different Sectors Of The Pakistan Economy. This Is So As To Discover And Provide An Insight On The Theoretical Models Used To Explain Capital Structure And Its Determinants.

The Literature Review Seeks To Offer Clear Understanding On The Theories Of Capital Structure And To Look At Its Determinants, How They Can Be Influenced By These Theories And How They Are Related To Gearing.

The Theoretical Foundation For This Research Will Be Established Through Literature Review Of Relevant Research. Priority Will Be Given To The Most Recent Work, Building Upon Earlier Works.
The Equity And Debt Value Used By The Company In Its Operation Will Constitute Its Capital Structure. The Capital Structure Decision Is Therefore A Very Important One Because Of The Impact Such A Decision Has On The Firm’s Ability To Deal With Its Competitive Environment.

It Is Often Debated Whether Commonly Perceived "Good Industry” Is Defined By Its Determinants That Can Point Towards The Right Mixture To Be Used To Achieve Optimum Capital Structure. Leverage Ratios Of Specific Industries Have Been Documented And Their Results Are In Broad Agreement And Show That Highly Geared Industries Have Consistently High Leverage.

In 50 Years Since The Pioneering Work Of Modigliani And Miller (1958), Vast Amount Of Academic Effort Of Research Has Been Devoted To Models Explaining Capital Structure. The Extensive Literature On The Subject Matter Is Of High Interest And Has Shown Its Popularity In The Corporate Finance Circles.

The Genesis Of The Theory Of Capital Structure Received Maximum Attention After The Seminal Work Of Modigliani And Miller (1958) On ‘Capital Structure Irrelevance Theory’ Often Referred To As MMI. This Paper Served As A Great Foundation For Many Of The Recent Work Carried On The Subject. The Enormous Criticism Received After The Publication Of MMI Gave Rise To MMII In (1963) Which Included Tax, A Component Absent In The Former.

Common Stocks Or Preferred Shares To Investors. In Return For The Money Paid, Shareholders Receive Ownership Interest In The Corporation. This Is Referred To Share Capital.

In An Attempt To Avoid Bankruptcy, Robicheck And Myers (1966) Propose That The Addition Of Debt May Force A Firm To Have Its Future Strategy In Order To Finance Promised Payments On Outstanding Debt. However, The Firm Is Likely To Incur Costs Which Are Associated With This Sort Of Action.

The Implications Of This Analysis Generated Enormous Criticism. Stiglitz, (1962); Baumol And Malkiel, (1967); Rubinstein (1973) And Scott (1976), Share A General Consensus That This Traditional Theory Fails To Consider The Damaging Effects Of Increased Debt On Firm.


According To Scott (1976), The Use Of The Traditional Theory In Such A Manner Can Have Negative Implications On A Firm Value Because It Fails To Consider The Effects Of Increased

There Are Many Variables Which Can Influence The Firms Leverage Ratio And Can Have A Positive Or Negative Impact On The Value Of The Firm. Harris And Raviv (1995) Identify Variables That Are Considered To Influence The Firm’s Leverage Ratio Such As: Size, Tangibility, Tax Shields, Growth Opportunities, Bankruptcy Probability And Assets.


Song (2005) Initiates That Capital Structure Determinants Are Dependent On The Nature Of Debt Taken By The Firms. The Different Determinants Have Different Impact On Short Term And Long Term Debt. This Study Finds Positive Relation Of Tangibility Of Assets Value With Long Term Debt While It Is Negatively Related With Short Term Debt. Size Is Positively
Related With Short Term Debt And It Is Negatively Related With The Long Term Debt Of The Firm.

Lima (2008) Conducted A Research In Bangladesh On Pharmaceutical Companies And The Findings Of The Research Are Almost Same And Are Aligned With Research Results In Rest Of The Developed Countries Of The World. The Size, Value Of Assets, And Financial Cost Do Effect The Financial Decision Of The Companies In This Sector. The Larger Companies Have More Access To Funds And Less Chances Of Default That’s Why They Enjoy More Borrowings As Compare To Smaller Firms.

The Firm’s Size Has Been The Critical Point Of Capital Structure Decision. According To Muradoglu (2009) As The Small Firms Have Restricted Access To The Funding That’s Why, They Face Higher Interest Rate As Compare To Larger Firms And Their Growth Is Ultimately Influenced. In Developing Countries The Larger Firms Can Easily Access The Debt Financing Whereas The Availability Of Funds For Smaller Firms Is Dependent On The Economic Conditions Of The Country.

There Is Also Difference In The Capital Structure Of Private And Public Owned Firms. Dewaelheyns & Hulle (2009) Argue That In Private Sector Companies The Capital Structure Of The Firms Is Not Driven Only By The Internal Financing But The External Financing Do Have An Impact On The Decision. Although The Private Firms Have Limited Access To Debt Financing But Still They Continue To Expand In Many Parts Of The World Because They Follow Pecking Order Theory (Mayers 1984), Which Suggests That Firms Prefer Internal Financing Until They Funds Are Sufficient To Meet Their Needs.
3.0 Conceptual Framework And Methodology

3.1 Dependent Variable

1. Leverage (Debt/Equity)

3.2 Independent Variables

1. Size
2. Growth
3. Financing Cost
4. Profitability
5. Tangibility

3.3 Hypotheses

Total Five Variables Have Been Used In This Study. The Only Dependent Variable Of The Study Is Leverage And Independent Variables Were Hypothesized As Follow:

H1: Profitability Is Negatively Related With Leverage.

H2: Size Is Negatively Related With Leverage.

H3: Growth Is Negatively Related With Leverage.

H4: Financing Cost Is Negatively Related With Leverage.

H5: Assets Tangibility Is Negatively Related With Leverage.
3.4 Sample And Methodology


We Present In Our Design Both Theoretical And Quantitative Analyses. For Quantitative Analysis We Use Two Methods: First: Correlations Is Used To Find Out The Association Between The Variables Under Consideration. Second: Regression Analysis Is Used To Further Measure The Relationship Of The Dependent And Independent Variable Accurately.

3.5 Statistical Tools

- Descriptive Data Analysis
- Correlation
- Regression

Following Model Will Be Used For The Purpose Of Analysis.

\[ \frac{D}{E} = A + B_1 (PFT) + B_2 (SZ) + B_3 (G) + B_4 (F.C) + B_5 (TG) + \varepsilon_i \]

- Where As
- \( \frac{D}{E} \) = Measure Of Leverage
- PFT = Profitability
- SZ = Size
- G = Growth Opportunities
The Determinants Of Capital Structure

- FC = Financial Cost
- TG = Tangibility Of Assets
- E = The Error Term

4.0 Data Analysis

4.1 Descriptive Data Analysis

Table 01

20 Pakistani Firms, 2004 – 2009, 5 Years 120 Observations

<table>
<thead>
<tr>
<th></th>
<th>Leverage</th>
<th>Size</th>
<th>Growth</th>
<th>Financial Cost</th>
<th>Profitability</th>
<th>Tangibility</th>
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<tbody>
<tr>
<td>Mean</td>
<td>560.7</td>
<td>1388.66</td>
<td>1386.3</td>
<td>113.885</td>
<td>17.687</td>
<td>1190</td>
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<tr>
<td>Median</td>
<td>291.4</td>
<td>1094</td>
<td>1110.95</td>
<td>58.8</td>
<td>16.6</td>
<td>997.4</td>
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<tr>
<td>Standard Deviation</td>
<td>2122</td>
<td>977.167135</td>
<td>998.353</td>
<td>163.478</td>
<td>104.76</td>
<td>787.2</td>
</tr>
<tr>
<td>Sample Variance</td>
<td>4503936</td>
<td>954855.61</td>
<td>996708</td>
<td>26725</td>
<td>10975</td>
<td>6E+05</td>
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<tr>
<td>Range</td>
<td>23246</td>
<td>4264.8</td>
<td>4337.5</td>
<td>856.9</td>
<td>1088.9</td>
<td>3583</td>
</tr>
<tr>
<td>Count</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
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</table>

4.2 Pearson’s Correlations Coefficients
Table 02

20 Pakistani Firms, 2004 – 2009, 5 Years 120 Observations

<table>
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<tr>
<th></th>
<th>Leverage</th>
<th>Size</th>
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<th>Financial Cost</th>
<th>Profitability</th>
<th>Tangibility</th>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Size</td>
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<tr>
<td>Growth</td>
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<td>0.85434047</td>
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<td>Financial Cost</td>
<td>0.276</td>
<td>0.41992973</td>
<td>0.32594</td>
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<tr>
<td>Profitability</td>
<td>-0.03</td>
<td>0.00757611</td>
<td>0.0331</td>
<td>-0.0087</td>
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<td>Tangibility</td>
<td>0.05</td>
<td>0.91191437</td>
<td>0.85641</td>
<td>0.43823</td>
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4.3 Regression Statistics

Table 03

20 Pakistani Firms, 2004 – 2009, 5 Years 120 Observations

<table>
<thead>
<tr>
<th></th>
<th>Multiple R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Standard Error</th>
<th>Observations</th>
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<tr>
<td></td>
<td>0.348447854</td>
<td>0.121415907</td>
<td>0.082881517</td>
<td>2032.398447</td>
<td>120</td>
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4.4 Anova

<table>
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<tr>
<th></th>
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<th>SS</th>
<th>MS</th>
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<th>Significance F</th>
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<tr>
<td>Regression</td>
<td>5</td>
<td>65075095.05</td>
<td>13015019</td>
<td>3.150845</td>
<td>0.010588304</td>
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<tr>
<td>Residual</td>
<td>114</td>
<td>470893352.8</td>
<td>4130643</td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>119</td>
<td>535968447.8</td>
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5. Results Description And Conclusion

5.1 Overall Overview of the Findings

Analysis Of All Firms Shows That Total 12% Variation In Dependent Variable I.E. Leverage Or Debt To Equity Is Related To The Values Of All Five Independent Variables Of The Study As Evidenced In R-Square Value In Other Words 12 % Variation In Leverage Decision Of The Firm Is Explained By Profitability, Size, Tangibility, Growth, And Cost Of Financing. Rest Of The 88% Is Due To Extraneous Variables. Overall Significance And Goodness Of The Model Is Relatively Low Just Because Of The Unavailability Of Data Or Incomplete Data Available Through Different Sources Which Is Unable To Use In This Study.

5.1.1 Size

From The Theoretical Point Of View, The Effect Of Size On Leverage Is Unclear. As Rajan And Zingales (1995,) Claim: “Larger Firms Tend To Be More Diversified And Fail Less Often, So Size (Computed As The Logarithm Of Net Sales) May Be An Inverse Proxy For The Probability Of Bankruptcy. If So, Size Should Have A Positive Impact On The Supply Debt. Some Authors
Find a positive relation between size and leverage, for example Huang and Song (2002), Rajan and Zingales (1995).

In our study size of the firms also suggests accepting the negative hypothesis and rejecting the hypothesis that with increase in size of the firm, the leverage of the firm also increases as this test is statistically insignificant.

5.1.2 Growth

According to Myers (1977), firms with high future growth opportunities would use more equity financing, because a higher leveraged company is more likely to pass up profitable investment opportunities. As Huang and Song (2002) claim: “Such an investment effectively transfers wealth from stockholders to debt holders.” Therefore a negative relation between growth opportunities and leverage is predicted. As market-to-book ratio is used in order to proxy for growth opportunities, there is one more reason growth of the firm is negatively related to debt/equity ratio in our study as the regression analysis shows negative relationship with debt to equity ratio so we accept the hypothesis generated in our study that is growth is negatively related with our dependent variable.

5.1.3 Financial Cost

Financial cost is positively related with debt to equity ratio which simply means that when the debt ratio of any company will increase there will also be sure increase in the
Financing Cost Of The Company. The Positive Hypothesis Is Accepted Which Was Suggested In The Start Of Our Study In Theoretical Framework And Hypotheses Generation Section.

5.1.4 Profitability

There Are No Reliable Theoretical Predictions On The Effects Of Profitability On Leverage. The Trade Off Theory Suggests That The Firms With More Profit Should Take More Debt. The Free Cash-Flow Theory Propose That More Profitable Firms Should Employ More Liability In Order To Control Managers, To Tempt Them To Pay Out Cash As A Substitute Of Spending Money On Incompetent Projects. However, Pecking-Order Theory Claims, Firms Prefer Internal Financing Over External.

Profitability Is Negatively Related With Leverage As It Is Hypothesized In This Study The Results Of Regression Analysis Shows That The Profitability Is Negatively Related With Leverage So It Suggests That We Should Accept The Null Hypothesis.

5.1.5 Tangibility


Several Empirical Studies Confirm This Suggestion, Such As (Rajan – Zingales,1995), (Friend – Lang, 1988) And (Titman – Wessels, 1988) Find. On The Other Hand, For Example Booth Et

There Is A Positive Relationship Between Tangibility And Firms Leverage. In Both Regression Techniques This Test Is Significant.

Conclusion

This finds that capital structure determination is not a science so the firms analyze a number of factors to choose a best mix of debt and equity. In Pakistan as well there are different factors that affect a firm's capital structure decision. The results suggest that in Pakistan most of the firms prefer internal funds over the external financing. In Pakistan the main source of funding is banking sector which generally prefers the larger firms while funding. So the larger firms can take loan very easily because of the banking sector preferences. As most of the Pakistani firms are of medium size, therefore these firms are unable to take loans for their future projects. One more possible reason of taking less loans can be the legal procedures and obligations involved in the process of debt financing. The last reason which is not proved yet could be the religious teaching about the interest, which is forbidden in Islam.
References


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