Effect of Debt Financing on Firm Performance: A Study on Non-Financial Sector of Pakistan

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ABSTRACT
This study attempts to examine the association of different debt financing on firm’s performance in 14 sectors of Pakistan. Secondary data is collected about 14 different sectors in Pakistan Stock Exchange, for the time period of 9 years (2006 to 2014). The results of the study indicated that debt financing have negative but also significant impact on firm performance in Pakistan. This study findings recommends that companies should more rely on their internal source of finance because it is the cheap and reliable source of finance in Pakistani context.

Keywords: Short term, Long term debt, Total Debts, Firm Performance, Non-financial Sectors

INTRODUCTION
Today, capital structure decision is very important to increase the value of the company. So, the company should make such strategy with a mix of debt and equity which increase the firm’s value. Capital structure is debt and equity’s mixture that the companies’ use to finance in the operations of business. If this structure is well-organized, the cost of capital decreases which can increase the value of the company (Damodaran, 2001). The capital structure is the most important managerial decision because it affects the shareholder risk and return (Pandey, 2010). Due to lack of planning about capital structure in companies, they can face financing issue for activities of business and they don’t use their funds optimally. Debt is the tax-deductible expense so this is cheap source of finance as compare to equity and increase the dividend per share and earning per share (Adesina et al., 2015). Initially the experts of finance thought that firms should take the loan up to certain limit because increase in leverage increase the interest cost and decrease the performance of company (Chowdhury & Chowdhury, 2010). If the company has no ability to pay off the debt then it should not take high level of debt. There should be an optimal capital structure which balance the tax saving benefit and bankruptcy cost, but high leveraged cause the increase in cost of capital and ultimately decrease the value of the company (Desai, 2007).

In Pakistan, there is no established market of bonds, debentures and notes so the company’s main sources of finance but banks. Short term and long-term finance providers are such institutions which are owned by the government. Due to this, the performance of non-financial sector and financial sector have been decreasing. Without checking the performance of companies the financial institutions issue the loans on political bases and decrease the performance of both financial as well as non-financial sector by borrowing. Debt financing is the worldwide problem for both developing and developed countries. The importance of this research is that no prior work is conducted on relationship between debt structure and performance.

There are many studies that existed on individual sector of Pakistan to check the relationship between debt financing and performance but no study exists which focused on over all non-financial sectors of Pakistan. The specific objectives of the study are to examine the relationship between short term debt and long term debt with performance of the companies in Pakistan. Capital structure in non-financial sector which covers the 14 sectors (Textile, Food, Sugar, Chemicals, other manufacturing, Mineral products, Cements, Motor vehicles and auto parts, Fuel and energy, Information, communication and transport services, Coke and refined petroleum products, Paper and Paperboard, Electrical machinery and other service activities) in Pakistan. So, this study is comprehensive and provide the complete picture of performance of overall non-
financial sector of Pakistan. The study recommended that the companies in Pakistan should use the less level of debt because it decrease the performance of companies in Pakistan. The companies should more rely on their internal source of finance because it is the cheap and reliable source of finance. The companies should use the optimal level of capital structure because high level of debt cause the insolvency risk of companies. There is a need to solve the problem of information asymmetry because companies are not disclosing all the information to the public. This study is very helpful for the shareholders, debt holders and the finance managers of the companies.

LITERATURE REVIEW

Debt Financing and Companies’ Performance In Pakistan

According to Champion (1999) “leverage is the way to improve the performance of companies”. External debt financing plays an important role to increase future productivity of firms and more important for future growth (Gornis and Khatiwada, 2016). External sources of finance used when internal sources are not enough to fulfill the needs of the organization and need more finance and borrow from outside the organization (Mwangi et al., 2014). Companies’ issuance of shares is the external source of finance and these shares may be issued to the existing shareholders or to the new shareholder and it is the cheapest source of finance (Clive et al., 2010).

Ghafoor (2012) analyzed the decisions relating to the capital structure in the area of engineering. Tobin’s Q, Gross profit margin and ROA were used to measure the firm’s performance while capital structure measured from Total debt to total Assets, Short term debt to total assets and Long term debt to total assets. The results showed that increase in debt cause the decrease in performance. Umar et al., (2012) investigated the impact of capital structure on performance of companies. The data have collected from secondary source which was Karachi stock exchange. There was inverse relationship between debt and performance of companies. It suggested that managers should not use more debt as compare to equity and projects should be supported from internal resources which is retained earnings. Javed et al. (2014) evaluated impact of capital structure on the performance of companies. The study concluded that there is a mixed relationship between the performance of companies and the capital structure. It is suggested that this research can be extended to Asian firms or at worldwide level.

Jaramillo and Schiantarelli (2002) investigated the long-term debt effect on firms’ performance in Ecuador. There was a positive correlation between debt and age of firms. Older firms have easily access to finance and improved their performance. GMM model used in this study for estimation. There was the positive relationship between debt and productivity and increase in debt cause the to increase the productivity. Abor (2007) examined the relation between debt policy and performance of (SMEs) in Ghana and the South Africa. The study concluded that total debt and the short-term debt decrease the gross profit margin in both countries while the long-term debt leads to increase the gross profit margin in both countries. Results indicated that capital structure negatively affect SMEs performance. Zeitun & Tian (2007) evaluated the relation of performance and capital structure of companies in Jordan. The data have collected from secondary sources and obtained from Amman stock exchange and trading companies’ financial statements. The results showed that there was inverse relationship between debt and firm’s performance. Size of the company has also positive effect on performance of company because large firms have low bankruptcy costs.

Kumar and Woo (2010) examined the relationship between debt and economic growth. The methodology adopted in the study was GMM (SGMM) dynamic panel regression. His study concluded that impact of debt on the growth is negative. So, increase in debt cause the decrease in growth. Iavorskyi (2013) explored the relationship of debt and performance. The variables used in the study for performance measure were total factor productivity (TFP), ROA and EBIT while leverage includes the total leverage and long term leverage. The methodology adopted in the study were fixed effect regressions and dynamic model. The study concluded leverage cause the decrease in performance.

Dada (2014) investigated relation between profitability and debt of big firms in Nigeria. ROA and ROE which were used to measure the performance of company while debt of short term and long term used in study as independent variables. Fixed effect and panel data techniques used for analysis. The results showed that if there is increase in debt then the profitability of
corporation declines. This study can be extended by including all firms in Nigeria instead of large firms only. Gabrijelcic et al. (2013) examined the relation of firm’s performance and the leverage. This study results showed that increase in leverage cause the decrease in performance. The study suggested that firms should use foreign financing to improve the performance but not too much which can negatively affect the firm performance.

Earlier studies have been conducted on these manufacturing sectors and used the different time periods. Some studies used less time period and only taking one or two manufacturing sectors and some studies used less time period but taking all manufacturing sectors and no any study has been done during 2006 to 2014 which consider these all non-financial sectors companies. So, our study will fill this gap to analyze the performance of companies by using debt financing in the period from 2006 to 2014.

Theories of Capital Structure

There are different theories on capital structure. Traditional theory on capital structure was intuitive view and not take the basis of any theory. Taxation is ignored in traditional theory of capital structure. When the gearing level is low then equity holders do not demand high return due to low risk and increase in debt decrease the WACC. When the gearing level is high then equity holders demand high return due to increase in risk because they know that interest is paid first then they receive their return and cost of equity increased and this increase greater than benefit from cheaper debt and WACC starting to increase.

In 1958 Modigliani and Miller investigated that (ignoring tax) financial structure has no any impact on the company’s cost of capital and ultimately value of the company is unaffected from financial structure. This theory says that when the company used the debt in its capital structure then there is no any reduction in weighted average cost of capital (WACC). Modigliani and Miller stated that when the company used more of debt then risk of shareholders have increased then shareholders demand high return on their shares and not any decrease in cost of capital. MM theory (ignoring tax) explained that capital structure is irrelevant from the value of the company.

Value of unleveraged firms is equal to the leveraged firms.

\[ V_L = V_u \]

So, debt brings no any benefit to the company.

Pecking order theory suggested that when a firm has project and consider how to finance this project then there is a pattern of choose of source of finance. This theory introduced by Donaldson in 1961. This theory suggested that firms should raise funds in this pattern which is as follows:

- Internally-generated funds (retained earnings)
- Debt
- Equity

So, firms first choose retained earnings as source of finance then debt and finally equity (Akeem et al. 2014 & Myers, 1984)

Under the net income approach, when the firm used more and more leveraged in their capital structure then weighted average cost of capital decreased while the share price and the value of the company increased and decrease in debt cause the increase in cost of capital and decrease the value of firm and share price (Afrasiabishani, 2012).

DATA AND METHODOLOGY

Population and Sample Size

The population in this study was all companies of 14 sectors but due to unavailability of data the sample of 360 companies have been taken. Study covers the time from 2006 to 2014. Secondary data has been used in the study and taken from financial statements of the corporations. Methodology adopted was Panel least square and used the Hausman test for the selection of the fixed effect or the random effect model. Model in this study is specified as follows:

Econometrics Models Specification

To investigate the impact of debt financing (STD, LTD and TD) on firm performance using different sectors of Pakistan, the following econometrics model are as follow:

**Model 1. Short Term Debt and Firm Performance**

\[ \pi_{it} = \beta_0 + \beta_1 \text{STD}_{it} + \beta_2 \text{FS}_{it} + \beta_3 \text{SG}_{it} + \beta_4 \text{AG}_{it} + \beta_5 \text{TAX}_{it} + \epsilon_{it} \]  

(4.1)

**Model 2. Long Term Debt and Firm Performance**

\[ \pi_{it} = \beta_0 + \beta_1 \text{LTD}_{it} + \beta_2 \text{FS}_{it} + \beta_3 \text{SG}_{it} + \beta_4 \text{AG}_{it} + \beta_5 \text{TAX}_{it} + \epsilon_{it} \]  

(4.2)
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Model 3. Total Debt and Firm Performance

\[ \pi_t = \beta_0 + \beta_1 \text{TDTA}_t + \beta_2 \text{FS}_t + \beta_3 \text{SG}_t + \beta_4 \text{AG}_t + \beta_5 \text{TAX}_t + \epsilon_t \] (4.2)

Where:

- \( \pi = \) Firm Performance
- STDTA = Short term debt to total assets
- LTDTA = Long term debt to total assets
- TDTA = Total debt to total assets
- FS = Firm size
- SG = Sales growth
- AG = Asset growth
- TAX = Tax

\( \pi = \) Firm Performance which is measured by return on assets, return on equity and earning per share and gross profit margin

STDTA = Short term debt divided by Total Assets

LTDTA = Long term debt divided by Total Assets

TDTA: It is calculated by

Firm size (FS) is measured by natural log of the total assets.

Asset growth (AG) is difference between current year assets and prior year assets divided by prior year assets.

Sales growth (SG) is the difference between current year sales and prior year sales divided by prior year sales.

Tax is measured by tax paid by the corporations on their earnings.

\[ \text{TAX} = \text{Tax rate} \times \text{earnings} \]

Pair wise Correlation

Correlation analysis is used to check the strength of relationship between variables. Correlation analysis used for to check the fluctuation between the variables. If correlation value less than or equal to 0.20 then the correlation is weak and if correlation value less than or equal to 0.40 but greater than 0.20 then the correlation is not good and if the correlation value lies between 0.40 and 0.60 then it is
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Regression Models

In above results, the relationship between EPS and STDTA is positively insignificant. Short term debt cause the increase in EPS. The relationship between LTDTA and EPS is negatively insignificant. So long term debt decrease the earnings of the companies. TDTA and EPS relationship is also insignificant and negative. The relationship between firm size and EPS is significant and positive at 1% level of significance because when the firm size increases then companies achieve the economies of scale and increase the earnings. The relationship between EPS and sales growth is significant and positive at 1% level of significance. Asset growth and EPS relationship is positive and insignificant. Asset turnover and EPS relationship is positive and significant at 1% level of significance.

There is negative relationship between DE ratio and EPS and this relationship is significant at 1%. The relationship between ROA and STDTA is negatively insignificant. The relationship between LTDTA and ROA is negatively insignificant. So long term debt and short term debt decrease the performance of the companies. TDTA and ROA relationship is also insignificant and negative. The relationship between firm size and ROA is significant and positive at 1% level of significance because when the firm size increases then companies achieve the economies of scale and increase the performance of companies. The relationship between ROA and sales growth is significant and positive at 1% level of significance. Asset growth and ROA relationship is positive and insignificant. Asset turnover and ROA relationship is positive and significant at 1% level of significance. There is negative moderate correlation. and if correlation value falls in the interval of 0.60 and 0.80 then correlation is good and if the correlation value above the 0.80 then it is strong correlation (Javed et al 2014). The above table shows that there is positive correlation between ROA and EPS, ROE and EPS and GP ratio and EPS. There is negative relationship between STDTA and EPS, LTDTA and EPS and the TDTA and EPS. Firm size, sales growth, asset growth and assets turnover positively related to the EPS while DE ratio is negatively correlated with EPS. There is positive correlation between ROE and ROA and GP ratio and ROA. There is negative correlation between STDTA and ROA, LTDTA and ROA and the TDTA and ROA. ROA is positively related with firm size, sales growth, assets growth and assets turnover. ROA is negatively related with DE ratio. GP ratio and ROE is positively related with each other. STDTA, LTDTA and TDTA are negatively correlated with firm size, sales growth, assets growth and assets turnover. LTDTA and ROA relationship is also insignificant and negative and assets growth and assets turnover. TDTA and ROA relationship is also negatively correlated with sales growth and DE ratio. Firm size is positively related with sales growth, assets growth, assets turnover and DE ratio. Sales growth is positively related with assets growth, assets growth and DE ratio and negatively correlated with firm size, assets growth and assets turnover. TDTA is negatively correlated with firm size, assets growth and assets turnover and negatively related with sales growth and DE ratio. Firm size is positively related with sales growth, assets growth, assets turnover and DE ratio. Sales growth is positively related with assets growth, assets growth and DE ratio. There is positive correlation between Assets growth and assets turnover and the DE ratio and assets growth. DE ratio is positively related with assets turnover.

![Table 2](image)

Regression Models

In above results, the relationship between EPS and STDTA is positively insignificant. Short term debt cause the increase in EPS. The relationship between LTDTA and EPS is negatively insignificant. So long term debt decrease the earnings of the companies. TDTA and EPS relationship is also insignificant and negative. The relationship between firm size and EPS is significant and positive at 1% level of significance because when the firm size increases then companies achieve the economies of scale and increase the earnings. The relationship between EPS and sales growth is significant and positive at 1% level of significance. Asset growth and EPS relationship is positive and insignificant. Asset turnover and EPS relationship is positive and significant at 1% level of significance.
relationship between DE ratio and ROA and this relationship is significant at 1%.

There is positive and significant relationship between ROE and STDTA at 1% significant level. LTDTA and ROE relationship is also positively significant. The relationship between ROE and TDTA is negatively significant at 5% level of significance. ROE and firm size relationship is positively significant at 1% level of significance. The relationship between sales growth and ROE is positive and significant at 1% significance level. Asset growth and ROE relationship is positive and insignificant. ROE and Asset turnover relationship is positively significant at 1%. The relationship between DE ratio and ROE is negatively significant at 1% significant level.

Table 3

<table>
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<tr>
<th>VARIABLES</th>
<th>(Model 1)</th>
<th>(Model 2)</th>
<th>(Model 3)</th>
<th>(Model 4)</th>
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<td></td>
<td>EPS</td>
<td>ROA</td>
<td>ROE</td>
<td>GPRATIO</td>
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<tr>
<td>STDTA</td>
<td>0.0610</td>
<td>-0.0896</td>
<td>0.639***</td>
<td>-0.565***</td>
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<td></td>
<td>(1.237)</td>
<td>(0.0597)</td>
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<td>LTDTA</td>
<td>-0.645</td>
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<td>0.845***</td>
<td>-0.436**</td>
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<td>(1.244)</td>
<td>(0.0600)</td>
<td>(0.126)</td>
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<td>FS</td>
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<td>0.00860***</td>
<td>0.0248***</td>
<td>0.0194***</td>
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<td>(0.0271)</td>
<td>(0.00131)</td>
<td>(0.00275)</td>
<td>(0.00298)</td>
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<td>SG</td>
<td>0.596***</td>
<td>0.0308***</td>
<td>0.0463***</td>
<td>0.108***</td>
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<td></td>
<td>(0.159)</td>
<td>(0.00765)</td>
<td>(0.0160)</td>
<td>(0.0174)</td>
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<tr>
<td>AG</td>
<td>0.245</td>
<td>0.0110</td>
<td>0.0166</td>
<td>-0.00568</td>
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<td></td>
<td>(0.196)</td>
<td>(0.00946)</td>
<td>(0.0199)</td>
<td>(0.0215)</td>
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<tr>
<td>AT</td>
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<td>0.0495***</td>
<td>0.0844***</td>
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<td>(0.0762)</td>
<td>(0.00368)</td>
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<td>DE</td>
<td>-0.596***</td>
<td>-0.0196***</td>
<td>-0.241***</td>
<td>0.0550***</td>
</tr>
<tr>
<td></td>
<td>(0.110)</td>
<td>(0.00529)</td>
<td>(0.0111)</td>
<td>(0.0120)</td>
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<tr>
<td>Constant</td>
<td>-2.752***</td>
<td>-0.0923***</td>
<td>-0.340***</td>
<td>-0.121***</td>
</tr>
<tr>
<td></td>
<td>(0.406)</td>
<td>(0.0196)</td>
<td>(0.0411)</td>
<td>(0.0445)</td>
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<td>Observation</td>
<td>1.316</td>
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Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

GP ratio and STDTA relationship is negatively significant at 1% level of significance. There is also negative significant relationship between LTDTA and GP ratio at 5% level of significance. The relationship between TDTA and GP ratio is positively insignificant. Firm size and GP ratio relationship is positively significant at 1% level of significance. Sales growth and GP ratio has positively significant relationship while asset growth and GP ratio has negatively insignificant relationship. Asset turnover and GP ratio has positively insignificant relationship. DE ratio has positively significant relationship at 1% level of significance.

DISCUSSION

The long-term debt effect on profitability is significant and negative. The regression results show that if the amount of long term debt has increasing then it will decrease the profitability of companies. The above results show that if there is increase in long term debt by 1 percent then performance will decrease by 24 percent. Long-term debt was significantly related to the profitability. The earlier studies by Addae et al (2013), Alawwad (2013), Zeitun and Tian (2007), Al-Taani (2013); Nguyen and Nguyen (2015), Amjad (2011) found the negative relation between performance and long term debt. The results also match the theory of pecking order which stated that companies should use the internal generated funds rather than take the loan which is costly and decrease the performance of companies. The performance of companies has reduced by using the debt because debt has increase the interest cost and reduced the income. The first control
variable used in the study was firm size (FS). There was positive and significant relationship between size of firm and performance of companies. The above results show that if there is increase in firm size then gross profit will increase by 23 percent. Larger firms have more returns than smaller firms, better management, more diversification investment option for larger firms and economies of scale. This result of firm size is matched with the findings of Gleason et al (2000), Mathur and Mathur (2000), Zeitun and Tian (2007) and Nguyen Nguyen (2015). The size of firms is also the important determinant of performance of companies. Asset growth is also the control variable. There is positive and insignificant relationship between asset growth and the companies’ profitability. The asset growth results are consistent with the earlier studies of Goyal (2013) and Ahmad et al (2012). Another control variable is sales growth. The relation between growth of sales and profitability of the companies is positive and significant. The result of sales growth match with the earlier studies of Boadi and Li (2015), Abor (2007) and Gabrijelcic et al (2013). Tax is also the control variable. The impact of tax on the performance of companies’ is insignificant and negative. If there is increase in 1% of tax then the profits of the companies decrease by 29 percent. This result is consistent with the earlier studies of Derashid and Zhang (2013), Md Noor et al (2010), Richardson and Lanis (2007) and Gupta and Newberry (1997).

CONCLUSION

The results of the study are showing that performance of companies is negatively related to the short term and long term debt. The impact of short term debt and long term debt is also significant and negative. That increase in debt cause the decrease in performance of the companies because debt is the expensive source of finance. So, the companies should rely on internal source of finance which is most reliable and cheapest source of finance. The firm size has significant and positive impact on the performance of companies. This shows that as the firm size increase the companies will take the benefit of economies of scale. The asset growth and sales growth have positive and significant impact on the performance of companies when companies use the short-term debt. This show that when the assets and sales will grow of the companies then it will increase the performance of companies. While when the companies use the long-term debt then sales growth has positive and significant impact while asset growth has positive and insignificant impact on the performance of companies. Tax has insignificant and negative impact on the performance of companies when companies use the short-term debt while in case of long term debt tax has insignificant but positive impact on the performance of companies. So, this study conclude that debt has negative impact on the performance of companies in non-financial sector of Pakistan.

POLICY RECOMMENDATIONS

The following are the suggestions and recommendation of the study.

- The study recommended that the companies in Pakistan should use the less level of debt because it decrease the performance of companies in Pakistan.
- The companies should more rely on their internal source of finance because it is the cheap and reliable source of finance.
- The companies should use the optimal level of capital structure because high level of debt cause the insolvency risk of companies.

FUTURE RESEARCH DIRECTIONS

Future research can be conducted on incorporating the other variables of performance measurement and the capital structure. By including the other variables of performance and capital structure the better results can be obtained. Future research can be extended by taking the long-time period which increase the reliability of the results. Future research can be done on the behavior of the investors whether they are interested in the investing in debt financed firms or the equity financed firms. The study can be extended by examining the impact of debt financing on performance of Asian companies. The further study can be done on finding the optimal capital structure because no any prior study concluded that what is the optimal capital structure so there is a need to work on it.

REFERENCES


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