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Impact of Investment and Dividend Decisions on Financing Decisions: Evidence from Pakistan

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ABSTRACT

Raising funds efficiently for the operations of the firm is considered a very important decision. Since 1960's and after the emergence of different capital structure theories, many empirical studies have been conducted to determine the factors affecting the capital structure decisions. But the evidence regarding corporate investment and dividend decisions as determinants is limited and mixed. Empirical evidence from emerging economies is limited and this area is largely ignored. This study has mainly focused on the impact of corporate investment and dividend decisions on financing decisions of the firms in emerging economies. The panel data of non financial firms listed in Pakistan stock exchange is used. Panel data techniques i.e. OLS, fixed effect and random effect are used to estimate the results. The study also controls for the impact of profitability, size, liquidity and market to book ratio on the financing decisions. Findings showed that Investment is strong negative determinant of financing but dividend is irrelevant to the financing decisions. Profitability, liquidity and size of the firm have negative effect on leverage while growth opportunities has positive effect. He results have proved the application of pecking order theory in the context of Pakistan.



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Introduction

Modern corporate financing ideas are founded on Modigliani and Miller's (1958) work. They contend that in an efficient market with no taxes, bankruptcy fees, transaction costs, or information asymmetries, a company's worth is unaffected by how it is financed. In other words, a company's financing selections have no bearing on its worth. Corporate financing behaviour is hotly discussed in corporate finance literature. Following Modigliani-irrelevance Miller's premise, the research focused on how real-world defects affect the perfect market and how these market imperfections make corporations reliant on their financial decisions. However, Myers and Majluf (1984) and Myers (1984) documented the market imperfections due to information asymmetry in the capital

market. Jensen and Meckling (1976), Bernanke and Gertler (1990) demonstrated that due to conflict of interests and costly monitoring of managerial actions external finance providers demand high rate of return, so external finance is costly than internal finance. The investment decisions of the firms operating in such environments are affected by how the projects are financed. Due to information asymmetry different theories emerge that support capital structure decision relevance proposition. Agency theory (Jensen & Meckling, 1976), pecking order theory (Myers & Majluf, 1984), signalling theory (Bhattacharya, 1979), and trade off theory are some of the theories that have been proposed (Myers, 1984).

Dhrymes and Kurz (1967), McCabe (1979), and Partington (1985) discovered that corporate finance, investment, and dividend decisions are interrelated and support the relevance of financing decisions. MM theorems were called separation principles by Fama and Miller (1972). Hamid and Singh (1992) were one of the first studies to look at the financing behaviour of enterprises in developing economies, such as Pakistan. They came to the conclusion that major companies in poor countries are more prone to debt than those in wealthy countries. According to Booth, Aivazian, DemircugKunt, and Maksimovic (2001), developing-country enterprises have higher short-term debt in their capital structure than developed-country firms.

Most empirical studies of capital structure determinants have traditionally focused on firm-specific variables such as Titman and Wessels (1988), Rafiq (2008), Gurcharan (2010), Ahmed Sheikh and Wang (2011), Masnoon and Saeed (2014) and Sakr and Bedeir (2019). But evidence on the impact of corporate investment and dividend decisions on financing decisions is very small. This area of research is largely ignored in emerging economies. This study intended to give empirical data on the impact of corporate investment and dividend decisions on non-financial enterprises listed on the Pakistan stock exchange's financing behaviour. Profitability, size, liquidity, and market to book ratio all have an impact on financing decisions, according to the research. The following are the remaining sections of the paper. The second section contains a review of the literature on the factors that influence capital structure. The data sources and technique are discussed in Section 3. After that, there will be empirical results and a debate. The conclusion is found in section 5.

Literature review

Many empirical research have been done to determine the elements that influence a firm's capital structure. Rajan and Zingales (1995) conducted a study on a sample of enterprises in developed nations, attempting to understand the factors affecting the capital structure of firms in developed countries. Booth et al. (2001) investigated the factors that influence the capital structure of enterprises in developing nations. The following are some of the aspects that can influence your debt or equity decision.

Size

According to the pecking order idea, as businesses grow, they earn greater revenues and can thus use internally generated cash rather than seeking debt. The negative link between leverage and business size is predicted by the pecking order theory. Contrary to pecking order theory predictions, trade off and market timing theories suggest that large firms use more debt than small enterprises because of the interest tax benefits that large firms receive. Furthermore, the free cash flow hypothesis predicts that large companies will employ debt to offset the increased agency costs caused by the availability of free cash flows. The research on the relationship between business size and leverage is contradictory.

Rajan and Zingales (1995) looked at the factors that influence non-financial enterprises' capital structure in G7 countries. The author discovers that most countries have a positive link between business size and leverage, with the exception of Germany, where leverage and firm size have a

negative association. Ahmed Sheikh and Wang (2011) investigated the elements that influence leverage in Pakistan's manufacturing industry. The study's findings imply that firm size has a beneficial impact on debt ratio. Empirical evidence is also provided by Fama and French (2002), Antoniou, Guney, and Paudyal (2008), Ahmed, Ahmed, and Ahmed (2010), Lemma and Negash (2014), and Sakr and Bedeir (2019) in support of a positive company size and leverage relationship. Titman and Wessels (1988), Wald (1999), Chen (2004), Ab Wahab and Ramli (2014), and Acaravci (2015), on the other hand, discovered a negative association between leverage and firm size.

Profitability

Theoretical predictions concerning the profitability-to-leverage connection are inconclusive. According to the pecking order idea, corporations prefer internal finance to debt (Myers & Majluf, 1984). As a result, more lucrative businesses have more internal money and fewer external funding needs. Myers and Majluf (1984), Titman and Wessels (1988), Rajan and Zingales (1995), Nijenhuis (2013), Acaravci (2015), and Thalib, Herdiyana, and Wahid (2019) all found that profitability and leverage have a negative connection. More profitable enterprises, according to trade-off theory, should have more debt since they have more money to take advantage of the interest tax break. More profitable corporations should employ more debt to minimise the agency costs raised by the abundance of free cash flows, according to the free cash flow model. Some research have found a link between profitability and debt (Fattouh, Scaramozzino, & Harris, 2002; Selfiani, 2013).

Asset Tangibility

The majority of capital structure theories show that the sort of assets a company possesses has a significant impact on its capital structure. According to trade-off theory, asset tangibility and leverage have a positive relationship. Tangible assets have a higher collateral value, allowing businesses to borrow more money. Tangible assets will also lower the cost of financial crisis. Titman and Wessels (1988), Rajan and Zingales (1995), Frank and Goyal (2003), Zabri (2012), and Iqbal, Ahmad, and Ali (2019) all found that asset tangibility has a beneficial impact on leverage. In contrast to the trade-off approach, the agency theory implies that tangibility and debt have a negative relationship. Booth et al. (2001) used data from ten developing nations, including Pakistan, to analyse capital structure. The study's findings support the theory that asset tangibility and leverage have a negative connection. Abor (2005) and Masnoon and Saeed (2014) both found a negative association between asset tangibility and leverage in their empirical studies.

Growth Opportunities

Growth prospects are positively associated to company leverage, according to pecking order theory. Growing businesses may require outside financing if their internal funds are insufficient. When it comes to external financing, the pecking order hypothesis predicts that enterprises will choose debt to stock. As a result, growth prospects and leverage are linked. The positive leverage-growth link was supported in empirical research by Ahmed et al. (2010), Ahmad and Abbas (2011), and Thalib et al. (2019). The negative association between growth and leverage was discovered by Rajan and Zingales (1995), Fama and French (2002), Antoniou et al. (2008), and Frank and Goyal (2009). The trade-off theory explains why there is a negative association. Firms with larger growth potential, according to trade off theory, issue equity rather than debt to prevent stockholder-bondholder agency conflict, which can lead to underinvestment.

Non-debt Tax Shield

The fundamental advantage of debt financing, according to trade-off theory, is that interest payments are tax deductible and provide a tax shelter. Depreciation, often known as non-debt tax shield, is another item that provides tax relief. According to pecking order theory, the non-debt tax

shield is inversely proportional to debt. Non-debt tax deductions, according to Titman and Wessels (1988), are a substitute for debt tax shelter, hence firms with a high non-debt tax shield are likely to have less debt in their capital structure. The majority of empirical studies demonstrate that non-debt tax shelter and leverage have a negative association (Mackie-Mason, 1990; Scharfrodsky, 2002; Zabri, 2012; and Acaravci, 2015). Selfiani (2013) and Thalib et al. (2019) confirmed that the non-debt tax shield has no effect on leverage.

Dividend Policy

The firm's dividend policy has an impact on the debt and equity options available. The relationship between dividend policy and capital structure can be described using signalling theory, which states that higher payouts send a favourable signal to investors about the firm's future earnings. As a result, the cost of equity will be reduced, putting equity ahead of debt. This suggests that dividends and leverage have an adverse relationship. The negative link between dividend and leverage has been empirically proven by Rozeff (1982), Antoniou et al. (2008), and Lemma and Negash (2014). Firms with high dividend payout ratios, on the other hand, are more inclined to borrow when the dividend tax rate is higher than the capital gain tax rate, according to Chang and Rhee (1990).

Data and Methodology

Data

Data was collected from non-financial enterprises listed on the PSX (Pakistan Stock Exchange) and published by the State Bank of Pakistan to discover the factors that drive corporate funding. For the analysis, a balance panel of all non-financial enterprises from 2013 to 2018 was used. There are 1752 firm-year observations in the final sample.

Description of Variables

The proxies for all the variables are provided in table I to empirically quantify the impact of corporate investment and dividend on corporate financing decisions.

Table I. Description of Variables

| | | |
|------------------------------|-----|---|
| Dependent Variables | | |
| Financing decisions | FIN | Total liabilities/Total assets |
| Explanatory Variables | | |
| Investment decisions | INV | Operating fixed assets/Total assets |
| Dividend decisions | DIV | Dividend per share |
| Control Variables | | |
| Size | SZ | Natural log of total assets |
| Profitability | PRO | Profit after tax/Total assets |
| Liquidity | LIQ | Current assets/Current liabilities |
| Growth Opportunities | GO | Market price per share/Book value per share |

Methodology

This study's data set is organised as a panel, with cross-company and time-series observations. The panel data set greatly expands the sample size and is superior for studying change dynamics

(Ahmed Sheikh & Wang, 2011). In empirical corporate finance research, panel data is preferable to pure cross sectional and pure time series due to its rich structure. The drivers of business finance decisions were determined using three estimate models: ordinary least square (OLS), fixed effect, and random effect. The Hausman (1978) test is used to determine whether a fixed effect or random effect model should be utilised.

The basic regression model is shown in the diagram below.

$$FIN_{it} = \beta_0 + \beta_1 DIV_{it} + \beta_2 INV_{it} + \beta_3 SZ_{it} + \beta_4 PRO_{it} + \beta_5 LIQ_{it} + \beta_6 GO_{it} + \varepsilon_{it}$$

Where

FIN_{it} = financing decisions of firm i at time t

INV_{it} = investment spending of firm i at time t

DIV_{it} = dividend of firm i at time t

SZ_{it} = size of firm i at time t

PRO_{it} = profitability firm i at time t

LIQ_{it} = liquidity of firm i at time t

GO_{it} = growth of firm i at time t

ε_{it} = error term, β_0 = y -intercept, $\beta_1 - \beta_6$ = Coefficients of concerned explanatory variables

Empirical Results and Discussion

Descriptive statistics

Summary statistics of the variables are presented in Table II. The average value for investment is 44.5% which indicates the proportion of operating fixed assets employed by the firms. The average value of financing is 56.8% which shows the 56.8% of total assets are financed with total liabilities. The results shows the firms have high debt ratio. It is due to the negative equity of the firms which are included in the study. The negative equity is because of accumulated losses not because of negative paid in capital. The average value of dividend per share is Rs.0.80. This value is less than one rupee showing that most of the firms in Pakistan are not paying dividends frequently.

Table II: Descriptive Statistics

| Variable | N | Mean | SD | Min | Max |
|------------|------|--------|-------|---------|-------|
| INV_{it} | 1752 | 0.445 | 0.220 | 0.0004 | 0.982 |
| FIN_{it} | 1752 | 0.568 | 0.288 | 0.0681 | 2.691 |
| DIV_{it} | 1752 | 0.808 | 2.888 | 0.0000 | 47.00 |
| SZ_{it} | 1752 | 15.45 | 1.622 | 10.893 | 20.31 |
| PRO_{it} | 1752 | 0.039 | 0.122 | -1.9068 | 0.669 |
| LIQ_{it} | 1752 | 1.502 | 1.290 | 0.0068 | 15.97 |
| GO_{it} | 1752 | 20.532 | 63.03 | -287.67 | 1233 |

Prior to performing the estimation of the models, the data were tested for multicollinearity. For this purpose pair wise correlation coefficients between variables were estimated. Table 4.2. shows the correlation coefficients among the variables. The correlation coefficients among the explanatory variables are small which shows that there is no evidence of the problem of multicollinearity.

Table III: Correlation Matrix

| Variable | FIN_{it} | DIV_{it} | INV_{it} | SZ_{it} | PRO_{it} | LIQ_{it} | GO_{it} |
|------------|------------|------------|------------|-----------|------------|------------|-----------|
| FIN_{it} | 1 | | | | | | |

| | | | | | | | |
|------------|-----------|-----------|-----------|----------|----------|--------|---|
| DIV_{it} | -0.106*** | 1 | | | | | |
| INV_{it} | 0.198*** | -0.174*** | 1 | | | | |
| SZ_{it} | -0.09*** | 0.132*** | -0.165*** | 1 | | | |
| PRO_{it} | -0.445*** | 0.256*** | -0.262*** | 0.228*** | 1 | | |
| LIQ_{it} | -0.567*** | 0.140*** | -0.332*** | -0.005 | 0.296*** | 1 | |
| GO_{it} | 0.017 | 0.268*** | -0.095*** | 0.092*** | 0.231*** | -0.012 | 1 |

Note: *** significant at the 1% level, ** significant at the 5% level; and* significant at the 10% level.

Table IV: Effects of explanatory variables on Financing (FIN_{it})

| Variable | <i>OLS</i> | <i>FE</i> | <i>RE</i> |
|---------------------|------------------------|------------------------|------------------------|
| <i>C</i> | 0.8778*** (15.52) | 1.2748*** (8.01) | 1.0201*** (10.75) |
| DIV_{it} | 0.0021 (1.08) | 0.0008 (0.05) | -0.0003 (-0.24) |
| INV_{it} | -0.0572** (-2.19) | -0.1495*** (-5.09) | -0.1106*** (-4.10) |
| SZ_{it} | -0.0064** (-1.89) | -0.0348** (-3.44) | -0.0184** (-3.12) |
| PRO_{it} | -0.7730*** (-15.87) | -0.3687*** (-12.18) | -0.4068*** (-13.34) |
| LIQ_{it} | -0.1086*** (-24.05) | -0.0601*** (-14.71) | -0.0695*** (-17.68) |
| GO_{it} | 0.0003*** (4.15) | 0.0002** (2.58) | 0.0001** (2.83) |
| <i>N</i> | 1752 | 1752 | 1752 |
| R^2 | 0.4155 | 0.3211 | 0.3926 |
| <i>F</i> -Statistic | 206.76 | 72.880 | |
| Prob. > <i>F</i> | 0.0000 | 0.0000 | |
| Wald χ^2 | | | 598.47 |
| Prob.> χ^2 | | | 0.0000 |

Note: *** significant at the 1% level, ** significant at the 5% level; and* significant at the 10% level. t-statistics for the coefficients of the explanatory variables are reported in parentheses.

Estimation results of the financing equation are presented in Table IV. In the context of Pakistan it is shown that investment variable is significant determinant of the financing decisions in all estimation methods. But dividend variable is insignificant to financing decisions in all estimations that are OLS, fixed effect and random effect. Negative sign of the coefficient of investment in financing equation shows the inverse relationship between financing and investment decisions. Our results confirm the findings of Aivazian, Ge, and Qiu (2005), Vo (2019) and Rashid and Karim (2018). The possible explanation of this relationship can be the theory of underinvestment proposed by Myers (1977) argued that the highly levered firms invest less and forgo valuable investment opportunities. This is because of the problem of debt overhang. Moreover for firms with high leverage, investment in valuable growth opportunities will benefit more to creditors than shareholders.

The size of the company has also been found to be a significant driver of financing options. The size of the company and its funding options have a negative association. It means that huge companies rely on internal finances rather than taking on external loans. The pecking order idea is supported by our findings. According to the pecking order idea, as businesses grow, they earn greater revenues and can thus use internally generated cash rather than seeking debt. The negative link between leverage and business size is predicted by the pecking order theory.

Profitability, liquidity, and growth prospects are all crucial factors to consider when making finance selections. Profitability and liquidity have a negative association with finance policy decisions, while growth opportunities have a favourable link.

It means that firms that are more profitable and liquid have fewer needs for external financing. As a result, Pakistani listed companies follow the pecking order theory's projected hierarchy of money raising. According to the pecking order idea, corporations prefer internal finance to debt (Myers & Majluf, 1984). As a result, more productive and liquid businesses have more internal money and fewer external funding needs. Myers and Majluf (1984), Titman and Wessels (1988), Rajan and Zingales (1995), Nijenhuis (2013), Acaravci (2015), and Thalib et al conclusions .'s are all supported by our findings (2019).

Borrowings and development opportunities have a positive association, which supports the predictions of pecking order theory. Growing businesses may require outside financing if their internal funds are insufficient. When it comes to external financing, the pecking order hypothesis predicts that enterprises will choose debt to stock. As a result, growth prospects and leverage are linked. Empirical studies by Ahmed et al. (2010), Ahmad and Abbas (2011) and Thalib et al. (2019) also confirmed the positive leverage-growth relationship. The results of the Hausman test indicates that the estimation results of the fixed effect are better than random effect.

Table V. Hausman Test

| | Coefficients (b)fe | Coefficients (B)re | Difference (b - B) | sqrt(diag(v_b - v_B)) S.E. |
|--|-----------------------|-----------------------|-----------------------|-------------------------------|
| DIV | .000853 | -.0003935 | .0004788 | .0004816 |
| INV | -.149557 | -.1106987 | -.0388584 | .0115575 |
| SZ | -.034821 | -.0184388 | -.0163822 | .0082217 |
| PRO | -.3687321 | -.4068675 | .0381354 | - |
| LIQ | -.0601342 | -.0695199 | .0093857 | .0011152 |
| GO | .0001737 | .0001867 | -.000013 | .0000142 |
| Chi ² = 54.45 Prob.Chi ² = 0.0000 | | | | |

Conclusion

We attempted to investigate the impact of corporate investment and dividend decisions on non-financial enterprises listed on the Pakistan stock exchange's financing behaviour in this study. The sample comprises data from 292 businesses from 2013 to 2018. The results were estimated using panel data approaches such as pooled OLS, fixed effect, and random effect. The study has offered empirical information on how enterprises in emerging economies finance themselves.

The study's findings revealed that investment is a key driver, albeit one that has a negative sign. It means highly levered firms invest less. The relationship of dividend with financing is not significant. Profitability and liquidity is significant to the financing and it shows more profitable and liquid firms borrow less. Moreover the size of the firm is affecting negatively and growth

opportunities affect positively the financing decisions. Most of our results confirm the application of pecking order theory of capital structure in the context of Pakistan.

Like other studies this study also has some limitations. Further research might be conducted to redesign both conceptual framework and methodology. This study only focuses on the empirical investigation of the association between financing decisions, investment decision and dividend decisions. This study does not focus on the interdependence of corporate financial decisions.

Further research should be conducted that focuses on the interdependence of financial decisions by using simultaneous equation modelling, which may lead the different conclusions.

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