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Financing Decisions of Manufacturing SMEs: Evidence from India

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Abstract:

This paper studies the financial behaviour of Indian manufacturing companies. To select the companies to be surveyed, we used a stratified sampling method. The financial statements data were collected through a structured questionnaire and refer to the period 2013-2018. To achieve the research goals, we used the Ordinary Least Squares (POLS) regression, model. Our data showed no collinearity problems. The analysis used the theoretical approach of the trade-off theory and that of the pecking order. The results showed that leverage has a positive relationship with assets tangibility. Growth rate and taxation also have a positive relationship with leverage, but this relationship is not statistically significant.

The results also show that leverage has a negative relationship with age, liquidity and profitability. Ultimately, empirical findings suggest that the firm's age, assets tangibility, and liquidity are the most significant factors to explain the financial behaviour of Indian manufacturing firms

Keywords – Financial behaviour, Capital Structure, Debt, Profitability, SMEs

1. INTRODUCTION

The capital structure concerns the analysis of the capital components (debt and equity) that companies use to finance their investments (Modigliani & Miller, 1958, 1963; Fama & French, 2002; Frank & Goyal, 2009, Mueller & Sensini, 2021). The capital structure affects the value and profitability of the company. Therefore, studying the financial behaviour of the company is important to understand the company's survival and development chances (Harris & Raviv A., 1991; Rajan R. & Zingales L., 1995; Chen et al., 2014a; Chalmers et al., 2020a) as well as the risk of bankruptcy (Amendola et al., 2011; Campos et al., 2014; Sensini, 2015; Chalmers et al. 2018). However, identifying the optimal combination of debt and equity is not easy (Myers, 2001).

Furthermore, the optimal capital structure is also influenced by other factors, such as the reference competitive context, the company's specific characteristics, and the sector to which it belongs (Chalmers et al., 2020b; Hall et al., 2004; Sensini, 2017; Mannetta et al., 2017; Della Porta et al., 2018; Sensini, 2020b).

Consequently, the optimal capital structure suitable in one context may be ineffective in a different economic context (Harris & Raviv A., 1991; Sensini L., 2020a; Rajan R. & Zingales L., 1995; Noulas & Genimakis, 2011; Chen et al., 2014b). Given the importance of its function, the capital structure's decision is crucial for all businesses of any size (Chen & Sensini, 2014).

In developing economies, small and medium-sized enterprises (SMEs) represent the backbone of the economy and the country's engines of development, contributing significantly to social well-being and employment (Sensini, 2014; Scognamillo et al., 2016; Chen et al., 2021). In these countries, due to the lower development of the financial system, most SMEs mainly use their own capital as a financing source (Amendola et al., 2016; Sanchez & Sensini, 2017; Alvarez et al. 2021).

However, in certain circumstances, leveraging debt may be cheaper than using equity. Therefore, SMEs must understand the determinants that influence their total cost of financing and make appropriate decisions about the capital structure in such contexts (Sensini, 2003; Diaz et al., 2014; Campos et al., 2015). In the context briefly outlined, this study aims to study a sample of Indian manufacturing industries' financial behaviour.

The results of this study are important from several points of view. First, the research findings contribute to the literature, providing further empirical evidence on capital structure in the context of an emerging economy. Furthermore, the results can help SME entrepreneurs and managers improve the financial behaviour of their businesses.

The rest of the document is organized as follows. Section 2 develops the literature review, while Section 3 illustrates the methodology. Section 4 analyzes and comments on the results. Finally, the last section contains the concluding remarks.

2. LITERATURE REVIEW

Over the past sixty years, literature has proposed and developed several theories on the structure of capital. The traditional theories that initiated the debate on this issue stated that financial leverage affected the cost of capital of a firm (Modigliani & Miller, 1958). However, these theories were based on a perfect market and were

subsequently supplemented and refined by other studies based on more realistic assumptions. Among the different theories, the ones that have had the greatest diffusion and seemed adequate to our study's objectives are the trade-off theory and that of the pecking order. The first (trade-off) argues that the optimal debt-to-capital ratio can be obtained by balancing the tax advantage deriving from debt and the cost of bankruptcy that the firm may face. In this perspective, an increase in the level of debt causes an increase in the risk of financial difficulties and agency costs, determining a possible decrease in the company's value. Consequently, the optimal capital structure can be achieved when the marginal value of financial hardship and bankruptcy costs is equal to the additional debt tax shield (Jensen & Meckling, 1976; Sensini, 2016; Myers, 1977).

According to pecking order theory, firms prefer to finance investments first with internal funds, then with debt and finally with equity (Myers & Majluf, 1984). This theory suggests that the most profitable companies tend to use internal financing, while the least profitable ones resort to external financing.

The capital structure concerns the debt and capital components that companies use to finance their investments. The literature that has investigated this issue has used proxies to study the financial behaviour of firms. In this study, in line with the main literature, we use the age of the firm, the tangibility of assets, liquidity, profitability, growth rate and taxes to explain the financial behaviour of firms (Aggarwal, 1981; Titman & Tsyplakov, 2005; Fama and French, 2002; Cassar and Holmes, 2003; Abor, 2008; Frank and Goyal, 2009; Bello & Sensini, 2020; Baharuddin et al., 2011; Sogorb Mira, 2005; Van der Wijst & Thurik, 2003; Vos et al., 2007). Below, we briefly describe each proxy used.

The enterprise's age refers to the number of years of the companies' life, representing the stage of the life cycle of the enterprise. According to the trade-off theory, the age of the firm is positively correlated to debt. Therefore, mature companies have easier access to loans than younger companies, as they enjoy a better financial reputation and have a traceable trend over time (Sanchez & Sensini, 2013).

According to the pecking order theory, older companies have accumulated profits over the course of their existence. They, therefore, do not need to ask for external financing as they can use the retained profits to finance their investments.

Most previous studies have found a negative relationship between firm age and debt ratio (Saarani & Shahadan, 2013; Forte et al., 2013; Handoo & Sharma, 2014).

Assets tangibility refers to tangible fixed assets, i.e. those investments that can be used as collateral for loans (Sensini, 2020).

From this perspective, companies with high tangible assets have a lower risk of bankruptcy, while companies with few tangible assets have a higher risk of bankruptcy.

On this point, both theories, although with different motivations, suggest a positive relationship between tangible assets and the level of financial leverage because these assets can act as collateral for debt and at the same time reduce information asymmetries (Harris and Raviv, 1991; Jimenez et al., 2006)

In this regard, numerous previous studies have found a positive relationship between tangible assets and debt (Baharuddin et al., 2011). Other studies have instead highlighted a negative relationship (Saarani & Shahadan, 2013; Forte et al., 2013).

The liquidity of the firm refers to the ability of the firm to turn investments into cash. In this perspective, companies that have many liquid assets or assets that can be transformed into liquidity are able to exploit future investment opportunities by using their own resources.

The trade-off theory argues that these companies have a greater ability to attract financial resources to borrow and therefore suggests a positive relationship between liquidity and level of leverage. On the contrary, a pecking order theory argues that a firm with higher liquidity prefers to use internal resources to finance investments and therefore suggests a negative relationship between liquidity and debt. Most of the empirical results confirm this last theory (Sbeiti, 2010; Afza & Hussain, 2011).

The profitability of the company expresses the ability of the company to achieve positive results.

The trade-off theory suggests a positive relationship between profitability and debt. In this perspective, profitable companies have greater debt, as they have greater bargaining power vis-à-vis the financial system and can repay loans more easily.

Conversely, the pecking order theory suggests a negative relationship between profitability and leverage as profitable companies prefer to use internal resources to finance investments (Van der Wijst and Thurik 1993; Michaelas et al. 1999; Sogorb-Mira 2005; Degryse et al. 2012).

The trade-off theory holds that the firm's growth rate has a negative relationship with the capital structure as the growth of the firm occurs mainly thanks to the development of intangible assets. Consequently, the increase in intangible assets leads to fewer guarantees and greater difficulty in borrowing (Jensen, 1986; Elgonemy, 2002; Chen et al., 2019).

Conversely, the pecking order theory supports a positive relationship between the firm's growth rate and the capital structure as growing firms prefer to borrow to finance investment opportunities. Several empirical studies confirm this relationship between the firm's growth rate and the leverage ratio (Baharuddin et al., 2011).

The payment of taxes refers to the tax rate that the government applies to businesses. In this perspective, interest can represent tax-deductible expenses and, therefore, can reduce the tax burden on businesses. Consequently, when the tax rate is higher, businesses should use debt to finance their investments.

According to Modigliani & Miller (1963), the firm prefers to use debt rather than equity. The trade-off theory suggests a positive relationship between taxation and debt (Saarani & Shahadan, 2013; Handoo & Sharma, 2014).

3. METHODOLOGY

This study investigates the leverage of Indian manufacturing SMEs, analyzing the relationship between the capital structure determinants, as suggested by the main literature, and debt. To identify the companies to be analyzed, we followed a stratified sampling methodology (Amendola et al., 2020; Chalmers et al., 2020c), using an economic criterion. The approach used makes it possible to improve the estimates' efficiency, including in the sample a significant number of companies with different characteristics in terms of size, turnover and employees.

The data was collected through a structured questionnaire that made it possible to collect all the financial statement data relevant for our analysis. The time horizon analyzed is five years and goes from 2013 to 2018.

The sample consisted of 200 manufacturing companies based in the federated territory of Dheli. At the deadline for closing the survey, 106 SMEs participated in the research.

Debt was used as a proxy to assess the financial behaviour of companies. This variable was calculated as total debt divided by total assets. The six independent variables were instead calculated as specified below. The age of the company was determined based on the number of years the company was in business. The tangibility of assets was calculated as the ratio between total tangible fixed assets and total assets. The company's liquidity is measured by the ratio of current assets to current liabilities. The profitability of the business is calculated as income before interest and taxes divided by total assets.

The growth rate was calculated as the ratio between the increase in investments and total assets at the beginning of the year.

To achieve the objectives of our study we used the quantitative estimation of ordinary least squares (POLS) model, built on the basis of the following:

$$LEV_{it} = \beta_0 + \beta_1 AGE_{it} + +\beta_2 TANG_{it} + \beta_3 LIQ_{it} + \beta_4 PROF_{it} + \beta_5 GROW_{it} + \beta_5 TAX_{it} + \epsilon_{it}$$

Where:

LEV_{it}: debt ratio of firm i at time t;
AGE_{it}: age of firm i at time t;
$TANG_{it}$: firm's asset tangibility of firm i at time t;
LIQ_{it}: firm's liquidity of firm i at time t;
$PROF_{it}$: firm's profitability of firm i at time t;
$GROW_{it}$: firm's growth rate of firm i at time t;
TAX_{it}: firm's taxation payment of firm i at time t : stochastic error term of firm i at time t.

4. RESULTS AND DISCUSSION

Table 1 presents the descriptive statistics relating to the variables used in our study.

Tab. 1 – Descriptive statistics

	LEV	AGE	TANG	LIQ	PROF	GROW	TAX
Mean	0.1625	17.7784	0.4763	2.3764	0.0763	1.5549	0.1197
Median	0.1123	17.8900	0.4452	1.4325	0.0592	0.0059	0.1132
Std Dev.	0.1896	9.6573	0.1654	2.3651	0.0937	6.8769	0.3783

Within the limits of these variables' explanatory capacity, on average, companies show a prevalence of equity financing over debt.

The results of the regression model are represented in Table 2. Our data showed no collinearity problems.

Table 2 – POLS Regression Results

Variable	Coefficient	Standard Error	T-Statistics
C	0.261	0.043	5.890
AGE	-0.039	0.012	-2.759
TANG	0.205	0.057	3.675
LIQ	-0.035	0.006	-8.213
PROF	-0.043	0.095	-0.432
GROW	0.002	0.001	1.769
TAX	0.019	0.027	0.672

In line with the pecking order theory and with previous empirical research (Forte et al., 2013; Saarani & Shahadan, 2013), the results show that firm age is negatively correlated with debt, suggesting that firms mature prefer to use internal resources rather than leverage.

Assets tangibility has a positive relationship to debt, in line with both theories and other previous empirical research (Md-Yusuf et al., 2013; Saarani & Shahadan, 2013). On the other hand, it is evident that the presence of tangible fixed assets to be used as collateral for the loans reduces the risk for the lender and reduces the information asymmetry.

It means that SMEs that have more material assets have used debt to finance their operations. Similar results were found by

The firm's liquidity has a negative relationship to debt, suggesting that an increase in liquidity reduces the firm's funding needs and leads to less borrowing. These results are consistent with other previous empirical research (Sbeiti, 2010; Md-Yusuf et al., 2013).

Profitability has a negative relationship to debt, suggesting that profitable firms prefer to use profits to finance their investments. This empirical evidence is consistent with the pecking order theory but differs from what is predicted by the trade-off theory.

The growth rate has a positive relationship with debt, in line with the pecking order theory, suggesting that. Growing companies prefer to resort to debt as they do not have sufficient internal resources to finance growth. However, the results also show a statistically insignificant relationship.

Taxation has a positive but insignificant relationship with the financial behaviour of businesses. Consequently, the fiscal variable does not appear to be relevant to the firms' financial decisions studied.

5. Concluding Remarks

This paper aimed to study the capital structure of Indian manufacturing firms. To achieve the goal, we have selected a sample of 200 Indian companies.

We used the least-squares regression (POLS) technique. The results showed that leverage has a positive relationship with assets tangibility. Growth rate and taxation also have a positive relationship with leverage, but this relationship is not statistically significant.

The results also show that leverage has a negative relationship with age, liquidity and profitability. Ultimately, empirical findings suggest that the firm's age, assets tangibility, and liquidity are the most significant factors to explain the financial behaviour of Indian manufacturing firms. This study is important for several reasons. First, this research enriches the existing literature by providing further empirical evidence of firms' capital structure belonging to an emerging economy. Second, the results of this study can help entrepreneurs and managers make appropriate financial decisions. The limits of this research can be represented by the number of companies in the sample. Probably, a larger sample could have highlighted further elements worthy of investigation.

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