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Interactive Effect of Diversification Strategy on Capital Structure and Corporate Performance: An Analytical Evaluation

Rishi Manrai[1]

[1] Thapar University, Patiala, Punjab, India

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Abstract

Whether diversification benefits a corporation and its shareholders have been the subject of relevant discussion and research wherein economist and policy managers are working at different fronts towards gaining sustainable advantage and development. Present paper investigates possible measures to understand the effect of product diversification strategy on capital structure (CS) and corporate performance with respect to Indian context. The study involved database collected from non-financial companies listed in NSE and BSE for determining the relationship between variables- corporate growth, size, asset tangibility and profitability. However, research design using different models have been used to analyse the possible effects and relationships in between and among the dependent and independent variable of the study. In conclusion, study variables are associated and different relationships have been captured, analysed and interpreted using statistical tools (E-Views) and techniques. The results are representing and focussing the importance in line of the context of the study. These findings and results are pertinent for managers and top management assessing diversification strategies for investors, shareholders choosing suitable corporate and for researchers seeking to describe corporate performance differences.

Index terms— diversification strategy, systematic risk, corporate performance, correlation analysis, regression analysis, sustainable corporate value creation.

1 Introduction

he explosion of product diversification activities over the past few decades has encouraged strategic thinkers, policy makers, management research scholars to examine the effect and impact of diversification on a corporate performance and other variables of the study. Traditionally financial and economic theory recommends alongside diversification at the corporate level since investors have the chance to diversify and expand within their own portfolios added rapidly and at lesser rate. Though, corporate prolong to enlarge both inside and outside their core area of businesses regardless of the fact that lacking some kind of strategic fit product diversification adds little value, if no matter which to the vigorous strength of the individual business divisions. Present research paper empirically investigates the possible relationship diversification, capital structure and corporate performance by drawing from both the finance and the management literatures. It also broaden preceding research via the utilization of an improved accustomed performance measure, profitability, sample size etc. The intent is not to spotlight on the means of diversification strategy nevertheless rather the decisive consequence and impact as measured in the marketplace Jahera et al **??**1993).

The term "diversification strategy" coined by Ansoff (1972) in his famous study "A model for diversification" which explained different type of expansion strategies to be followed by a company. Out of several reasons for the corporate to diversify, the primary reason is, reducing risk of relying on only one or a few sources of income. Some other possible reason to diversify is avoiding cyclical or seasonal fluctuations (by producing goods or services

with different demand cycles), achieving higher growth rate and competing a rival by invading its core industry or market. A number of studies have hypothesized that diversification improves corporate profitability through economies of scope by pre empting the product space. Although the general views on the phenomenon are quiet inconclusive, one possible explanation by famous work of **??**cott (1982) which demonstrated three effects of diversification is worth mentioning. The first one is that it may generate multi market economies thereby increasing corporate profit.

When a corporate chooses to diversify, it tries to relate the new business is to the existing businesses of the corporate. Strategic actions are aimed at creating value for the organization. Therefore, it is important to look at the value creation rationale of diversification. Diversification moves create value when economies of scope exist among the multiple businesses in the organization, and exploiting these scope economies can be done more efficiently by the corporate rather than by shareholders on their own. The general discussion on value creation in diversification sets the stage for the next important pasture for the instructor -outlining the key elements of economies of scope. The concept of diversification strategy is indeed not rare. The inimitability of a corporate diversification strategy depends upon the economy of scope which is the focus of the strategy. Core competencies and multipoint T Year 2014 ( ) C competition are obvious examples of costly-to-duplicate economies of scope, while tax advantages and risk reduction are typically less costly-to-duplicate economies of scope.

2 II.

3 Literature Review

An early study by **??**arton and Gordon (1976) suggested the usefulness of the corporate strategy perspective in understanding capital structure. According to the study by Ajay and Madhumathi (2012), multinational and domestic companies differs significantly from each other with respect to parameters like leverage, tangibility, non-debt tax shield, age, size and agency cost. The study also reveals that Indian companies have higher debt as a part of their capital structure as compared to multinational corporations. However, Alonso (2003) tried to investigate the effect of diversification strategy on corporate capital structure and found a non-significant relationship between corporate leverage and the degree of corporate diversification. Abor (2008) provided and compared the capital structure of publically listed companies with that of large unlisted companies and small and medium enterprises in Ghana. The study highlighted that company size, age, asset structure, profitability, risk and managerial ownership are important in influencing the capital structure decision of Ghanaian companies. The result of this study is contrary to the trade-off theory by **??**odgilani and Miller (1963) and seems to support pecking order hypothesis by **??**yers (1984) and **??**yers and Majluf (1984).

Myers and Majluf **??**1984) suggested that both long term and short term debts have inverse relation with company profitability. Company growth was found to have a positive relation with long term debt for the unlisted company and short term debt ratio for small and medium corporate. Balakrishnan and Fox (1993) in their research showed the consequence of specialized assets and former exclusive description of a corporate in explaining the variance in capital structure across corporate. Evidence from the study of 295 mining and manufacturing firms strongly suggests that unique corporate specific assets and skills are, by far, the most important determinants of capital structure. For Rumelt's six diversification categories they found that betas for unrelated diversifiers are significantly higher than those of other firms. Emphasizing the fact that diversification strategy not only increased the return but also significantly reduces the systematic risk of the firm. Systematic risk is defined as the volatility of a particular stock to the market. Many researchers and economists interested to study the risk return pattern of diversified firms, including Montgomery and Singh (1984), tried to examine relationship between diversification strategy and systematic risk beta. On the similar lines Bettis and Mahajan (1985) suggested that diversified firms are able to reduce their systematic risk significantly and increase returns. The author also very strongly confirmed that there is still some level of correlation between related diversification and firm performance but the unrelated firm performance bears a negative correlation with diversification.

An additional study indicates two major effects on systematic risk, which operate in opposite directions and usually offset each otter. It is seen that diversification particularly into unrelated businesses reduces operating risk and, hence, systematic risk. At the same time, such diversification is associated with increase in leverage, which tends to increase systematic risk. It was categorically pointed that the two effects are of similar magnitude and, therefore, conclude that diversified firms trade off operating risk for financial risk.

Literature based on past studies (Levy and Samat, 1970) eventually reflects that under financial market assumptions, there are no economic motives for unrelated diversification. Tsai, in the research tried to derive a relationship between construction firm's financial performance/risk and there diversification strategies. The research suggests that for maximization of corporate profitability in construction business a single business strategy is a good choice. For risk aversive manager, dominant vertical strategy is the strategy recommended by major group of researchers studying the subject.

Lubatkin and Rogers (1989) concentrated and confirmed the corporate structure that are diversified in a constrained manner demonstrated significantly lower levels of systematic risk and significantly higher levels of shareholder returns than corporate employing other strategies. The findings accentuate the popular, though weakly supported, belief that controlled diversity is associated with the highest performance. Raphael and Livnat (1988), in their cross-sectional path analysis also confirmed that corporates trade off the reduction in

operating risk due to diversification with increased financial leverage, and thus the systematic risk remains the same. Their study uses theoretical considerations to empirically examine the effects of various diversification strategies on the capital structure of firms and on the systematic risk. It also documents that firms reduce their operating risk by diversification and increase financial leverage to take advantage of tax benefits. Chatterjee S. and Lubatkin M. (1994) on the other hand proved that the relationship between corporate diversification and both forms of stock return risk generates a U-shaped graph. Thus, the author recommended that an important way for corporations to minimize risk is to diversify into similar businesses rather than into identical or very different businesses.

Daud, Salamudin and Ahmad (2009) examined relationship between diversification effect on performance using multiple measures of performance namely accounting and market measurements. The evidence produces some interesting findings with regard to risk factors and effect on firm's performance while other factors are consistent with previous findings.

In particular, firms that adopt the focused strategy perform better than those with diversified strategy. Different measures of performance used in the study produced varying results after controlling for risk, firm size and economic condition, using the inflation rate as a proxy. Interestingly, Thompson (1984) examine the impact of strategic diversification on a market-based measure of firm. The results do not match with the earlier results. His studies further suggested that the companies do not bank on risk reduction as a general motive for diversifying merger. In fact they do not support the positive association between systematic risk and conglomerate status found in many US studies. Barton and Gordon (1988) emphasized that profit and debt levels are negatively correlated and therefore suggested that pure economic factors are not the sole mechanism for establishing capital structure. The result is consistent with the behavioral proposition that management of corporate desire flexibility and freedom from excessive restrictions of debt whenever possible. Profitability provides the ability to avoid debt by using self-generated funds to finance the business.

Gahlon and Stover (1979) employed a model, which incorporates variables measuring the effects of these motivations on a return-adjusted beta, to compare the performance of conglomerates with a control sample of non conglomerates, before and after the major external expansion period of 1967 and 1968. The results confirm our hypothesis that the effects on adjusted beta of the diversification efforts of conglomerate managements were at least partially negated by the greater risk inherent in their use of increased debt capacity. At the same time that conglomerates increased their internal and external diversification, their degree of financial leverage increased and their returnadjusted beta exhibited no change practically. In addition, with respect to the market's evaluation of the conglomerates' performance relative to that of non conglomerates, the significant diversification was not the external form which is implied when conglomerate market price performance is compared with that of mutual funds.

Raphael and Livnat(1988) using market based risk measures found that firms' trade off the reduction in operating risk due to diversification with increased financial leverage, and thus the systematic risk remains the same. This study uses theoretical considerations to empirically examine the effects of various diversification strategies on the capital structure of firms and on the systematic risk. It documents that firms reduce their operating risk by diversification and increase financial leverage to take advantage of tax benefits.

After going through the extensive literature above it can be easily estimated that there are different views of various researchers on the risk associated with diversified firms and the return associated with them. The present study is an attempt to establish a relationship between the risk-return relationships of those firms which have followed diversification strategy because as the company diversifies, it appears to be a change in the risk profile of the firm and thus the expected change in the returns of the company. This is particularly important because the change in firm returns brings about change in the market returns of the company and thus increases / decreases the share holder value of the firm. The following section discussed the objective of the study and linked hypothesis.

4 III.

5 Research Objectives

The research aims to study the impact of diversification strategy on capital structure and corporate performance in Indian context using nonfinancial companies. As a first objective, the study targets to see the impact of diversification strategy on capital structure of listed companies in BSE and NSE. Secondly, the paper attempts to study and establish the impact of diversification strategy on Corporate performance of listed companies in BSE and NSE in that period. Further, the research study also aims to examine and analyze the behavior of diversification strategy, capital structure and corporate performance of listed companies and their importance to achieve competitive advantage. To end with, present study intends to highlight their importance by companies stakeholders, investors etc.

IV.

6 Research Hypothesis

Based on the literature review the next section will discuss the hypothesis of the study. The main objective of the study is to the impact of corporate diversification on capital structure financial risk and corporate financial

performance of companies listed in Indian stock market. Additionally the researches would like to measure the change in the financial risk of diversified companies and its effect on their corporate growth these companies. The hypotheses of the study are:

Hypothesis-1: There is no significant difference in diversification index which is expected to have a strong effect on capital structure.

Low and Chen (2004) from their study, emphasized that product diversification is positively related to financial leverage, indicating that such diversification allows corporates to reduce their risks, thereby enabling corporates to carry higher debt levels. The findings for the effect of product diversification on capital structure generally indicate that corporates that diversify across product lines have higher debt ratios than non-diversified corporate. Lim et. Al. (2009) also used agency theory to predict the influence of related and unrelated product diversification on a corporate level of debt financing and established a link between diversification and capital structure is moderated by the environment in which corporates operate. Hypothesis-2: There is no significant difference in corporate profitability, which has a strong correlation with corporate capital structure.

The capital structure of a corporate is expected to reduce the cost of capital of a corporate and is this expected to positively impact its profitability ROA, ROE, etc. Although there are many instances of positive relation between leverage and corporate performance Mojtaba Akbarpour et al (2011). Ahmad and Abbas (2011) identified the determinants of capital structure of banks in Pakistan by using corporates level determinants of capital structure. Using panel data fixed approach model, the researchers showed that out of seven variables three (profitability, size, non-debt tax shields) are statistically significantly related to leverage. Chikir, Arcas and Bachiller (2008) have also supported the same by saying that profitability is higher for less leveraged corporates in all zones except for the British countries.

Hypothesis-3: There is no significant difference in growth opportunities which decreases corporate leverage.

The literature review suggests that Growth opportunities decrease corporate leverage. Panda (2011) in their work have linked capital structure with corporate performance. The research drawn from the capital structure literature to carve out the variables, i.e., tangible assets (AT), profitability, size, volatility, growth opportunities, etc. Research clearly indicate that venture capitalist very clearly watch corporate leverage and corporate growth before further funding the corporate. However, Barton and Gordon (1988) in there empirical study found that the capital structure is not directly influenced by the managing generation, but indirectly through the realized growth rate of the company. Bowman (1979 **??**owman ( ) et. al. (2004)) have also proved relationship of corporate growth and capital structure. The study proposes that growth opportunities decreases corporate leverage. Hypothesis-4: There is no significant difference in asset tangibility which has a strong correlation with corporate capital structure.

Asset Tangibility is also one of the major determinants of corporates performance. Many researchers such as Mackie-Mason (1990) concluded that a corporate with high fraction of plant and equipment (tangible assets) in the asset base opted for higher leverage and were proved to be more profitable than their counterparts. Campello (2006) in their research claims that when asset tangibility is high managers have heightened incentives to deliver on investors claims since liquidation/reorganization becomes a more credible threat. It is also observed that the component of investment that is explained by external financing is associated with superior (inferior) corporate product market performance, capital market valuation, and accounting returns when asset tangibility turns out to be high (low) after the corporate raises financing.

Hypothesis-5: There is no significant difference in diversification index which is expected to have no effect on systematic risk.

Many researchers including Montgomery and Singh (1984) found that betas for unrelated diversifiers are significantly higher than those of other corporates. Thus emphasizing the fact that diversification strategy not only increased the return but also significantly reduces the systematic risk of the corporate. Bettis and Mahajan (1985) suggested that diversified corporates have significantly able to reduce their systematic risk, beta and increase returns, ROA. The author had also very strongly confirmed that there is still some level of correlation between related diversification and corporate performance but the unrelated corporate performance bears a negative correlation with diversification.

Hypothesis-6: There is no significant difference in the growth opportunities which decreases corporate systematic risk. Bowman (1979) and other researcher provided theoretical biases for empirical research into the relationship between risk and financial variables. In a theoretical relationship between systematic risk and the corporates leverage and accounting beta, the researcher observed and categorically commented that systematic risk is not a function of earning variability, growth etc. Thopmson (1984) also emphasized that, there remain other possible managerial motives besides risk reduction including growth and other objectives which might be advanced by diversification. Hypothesis-7: There is no significant difference in diversification index which is expected to have a strong effect on corporate performance.

Diversification strategy is a very important tool used by companies these days to divide their risk by developing a range of products using the concept of asset specificity. Rumelt (1982) has shown an association between diversification strategy and profitability. Tallman and Li (1996), showed a consistent quadratic relationship between product diversification and MNE performance. product gradually. But this change has happened over a period of time. Aleson and Escuer (2002) examined the impact of product diversification on corporate performance. The results indicate that there is a positive correlation between levels of product diversification

has and the corporate performance Zhang (2011) from the study also, found a positive relationship between the listed textile corporates' unrelated diversification and their corporate value.

Hypothesis-8: There is no significant difference in capital structure which effect corporate performance.

Ramachandran and Rao (2010) provided empirical evidence on the relationship between industry pricing and capital structure. The researchers analyzed growth in corporate sales and profitability post an industry downturn under different financial structures. This methodology helps mitigate the endogenous nature of capital structure and corporate performance, since it is assumed that the downturn was not anticipated by industry participants. Also, inclusion of lagged values of debt ratio ensures that spurious relation between contemporaneous values of debt ratio and corporate performance is not obtained. It was thus confirmed that corporates which are over-levered compared to the industry median, experience lower sales growth and profitability vis-à-vis a benchmark corporate which assumes industry median characteristics. This lends support to the hypothesis that external financing induces financial fragility that leads to reduction in marketing spending at the time of distress.

V.

7 Research Methodology, Data Presentation & Results

The data for the study is supported a from well known academic data house known as Prowess of CMIE (Centre for Monitoring Indian Economy). The sample for study is a set of 44 companies which diversified during the year 2006-2011 and are listed at BSE and NSE (Bombay and National Stock Exchange) of India. These companies belong to different sectors like manufacturing, construction sector, industry automation sector, refractories / intermediates, automobile sector, cement/agri-business sector, ceramic tiles, chemicals and fertilizers sector, construction sector etc. This classification helped in segmenting sectors uniformly in studying the relationship of the variables in various sectors and to develop the policy framework. The present research work intent and indicates to measure the impact of diversification strategy on capital structure and corporate performance.

8 a) Variables Description

In line of identification study variables, the dependent variables are capital structure (leverage), systematic risk and corporate performance through structured models know as: (a) Leverage (LEV) Model, (b) Market Risk (?) Model and (c) Corporate Performance Model. The capital structure of the corporate is measured by popular corporate leverage ratio like debt equity ratio or total debt to total assets (TDTA) some of the other ratios are total debt to total assets (TDTA), long-term debt to total assets (LTDTA) and short-term debt to total assets (STDTA) as proxies for capital structure. Further the systematic risk of the companies is measured by calculating the covariance of market movement with respect to that of the stock movement [Cov (Ri, Rm)/Var (Rm)]. The corporate financial performance is price earnings (PE) Ratio measured by market price of common stock / earnings per share, return on assets (ROA), measured by profit after tax / total assets, and return on equity (ROE) measured by profit after tax / no. of shares outstanding.

However, the independent variables are classified as Diversification Index (DI), Corporate Size (SIZ), Profitability (PROF) and Asset Tangibility (AT). The extent of diversification can be measured using various index found in the literature like Herfindahl Index (HI), Entropy Index (EI) etc. based on corporate revenues.

Alonso, E. (2003) discussed the concept of Herfindahl Index (HI) which is defined as the sum of squares of the sales of the corporate by segment as a fraction of total corporate sales. If the corporate has only one segment, Herfindahl Index (HI) is one. According to its steps of construction, Herfindahl Index (HI) falls as the degree of corporate diversification increases. Other independent variable used in the study is profitability measured by EBIT + Depreciation / Total Assets, Onaolapo **??**2003). In related context other variables -Growth has been calculated by Book Value of Equity + Market Value of Equity / Total Assets whereas; Corporate Size was measured by using natural log of Sales, Hoskisson **??**1987).

As far as explanatory variables are concerned, dependent and independent variables are linked to test the hypothesis using three models approach through regression as a popular technique in business research domain. In present study, we intent to use fixed effects regression models / equations as listed below:

(a) Leverage (LEV) Model: Research Sample Size and its characteristics: The sample of non-financial firms is taken from CMIE (Prowess) included 44 that there is a great deal of variation in different conditions how diversification strategy exists and impacted corporate performance. Therefore, the firms mainly expected to diversify and expand are those in marketplace which restrain the corporate growth or profitability and found that beta (?), measure of systematic (market) risk, approximated the risk of the market for single businesses and associated diversifiers. The beta for unassociated diversifiers was actually higher than that of the market portfolio.y i L = ? 0 + ? 1 DI i + ? 2 PROF i + ? 3 GROW i + ? 4 SIZ i + ? 5 AT i + u i (b) Market Risk (?) Model: y i ? = ? 0 + ? 1 DI i + ? 2 LEV i + ? 3 PROF i + ? 4 GROW i + ? 5 SIZ i + u iy i P = ? 0 + ? 1 DI i + ? 2 LEV i + ? 3 GROW i + ? 4 SIZ i + u i

9 i. Model -Correlation Matrix

The correlation matrix for the variables is indicated in Table-2 in order to investigate the cor-relation between the explanatory variables for LEV model. In LEV model, the results show that there was a positive relationship between GROW and PROF, GROW and AT. However, relationship between DI with PROF and GROW found

positive, wherein DI has negative relation with AT. Table -3 depict the correlation matrix using explanatory variables to investigates the correlation between variables applicable to Market Risk (?) model.

10 Table 3: Correlation Matrix-Explanatory Variables for Market Risk (?) Model

Here, the results signifies positive relationship between TDTE and GROW, LTDTA and GROW, however STDTA and TDTA establishes a negative relation with GROW. According to Table-3, DI has positive relation with LTDTA, TDTA, STDTA but TDTE and GROW has weak relation with DI. Thus, diversification index approach and framework has significant action with LEV model ratios and GROW found weak relation such that diversification is infuriated from growing opportunities to form a bigger markets.

Moreover, the other results shows positive relationship between TDTE and BETA, BETA and GROW, LTDTA, BETA; while BETA has negative association with TDTA, STDTA and DI. It further implied that corporate and firms are not exposed to BETA and having impact on GROW but not reduces its complete corporate performance. There could be other variables are responsible, which are not taken into account of study to measure its impact of explanatory variables. This is a general phenomenon that follows by every company tries to remain in the market without DI strategies failure.

11 a. Regression Analysis

The following segment discusses the empirical results of the regression analysis using method -Least Square (LS) for 44 observations on case to case basis considering dependent and independent variable combinations applicable to different models (a), (b) and (c) as shown in Table-5 for (a) Leverage Model. According to Table-5, the positive square root of R 2 , namely R, is the coefficient of multiple correlations between all independent variables with the dependent variable. Furthermore, for independent (exogenous) variable in which arbitrary external conditions and in achieving a more realistic model behavior, then R 2 will be reduced to the coefficient of simple determination, namely r 2 , and r is a bivariate (simple) coefficient of correlation with -1? r ?+1. The adjusted R-squared value is never larger than R2, can decrease as

12 ii. Model (a): The Leverage (LEV) Model

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independent variables are added and, for poorly fitting models, it may be negative. However, t-statistic will be used to test the adjusted effect of an independent variable on the corresponding dependent (endogenous) variable. Note that the t-statistic presented in the output can also be used to test the one-sided hypothesis. Finally, the log likelihood (LL) function is maximized with respect to other variable used in OLS regression. Hence, the GLS estimate is also the maximum likelihood estimate where, STDTA, LTDTA and TDTA are positive and TDTE is negative. The Akaike Information Criterion (AIC) is used in model selection for nonnested alternatives, with smaller values of AIC preferred. The Schwarz Criterion (SC) is an alternative to the AIC and imposes a larger penalty for an additional coefficient. Two models are considered as nonnested models if and only if the set of independent variables of the first model is not the subset or upper set of the other model. The Durbin-Watson (DW) statistic = 2.51 in case of LTDTA, which indicates that this model is better than the other variables. The Hannan-Quinn Criterion (HQC) is preferred in case of TDTE out of TDTA, LTDTA and STDTA in a statistical sense, under the assumption that they are non-nested models, since they have the same independent variable. Hypothesis 1: There is no significant difference in diversification index which is expected to have a strong effect on capital structure.

From the regression results in Table-6, the coefficient of diversification index variable was negatively and positively significantly related to TDTA, TDTE and LTDTA, STDTA respectively. The types of assets by a corporate helps to control their financial decisions, however it is promising to set up a relationship between capital structure and the diversification strategy of a corporate through dealings. Results also show that the financial leverage of international corporate decreases with their diversification level. Besides, international companies like MNCs with a top level of international and product diversification countenance inferior stages of default risk. Corporate following both types of diversification have upper level of profitability and productivity than the international companies pursuing a single diversification strategy.

Thus, it is concluded that the two types of diversification complement one another is generating debt utility, although individually they may be negatively related to corporate leverage. Therefore, based on the statistical result and inference, Hypothesis-1 is accepted where the diversification index has a strong effect on capital structure.

Hypothesis 2: There is no significant difference in corporate profitability, which has a strong correlation with corporate capital structure.

Four capital structure variables were used, TDTA, TDTE, LTDTA and STDTA. From the regression results in Table-5, the coefficient of profitability variable was negatively related to TDTA, TDTE and LTDTA and significantly related to STDTA. This result was contrary to the predictions of trade-off theory but consistent with the pecking order theory. According to this theory, companies prioritized their sources of financing (from internal financing to equity) according to the law of least effort or of least resistance, preferring to raise equity as a financing means of last resort. Hence, internal funds were used first and when that was depleted, debt was issued and when it was not sensible to issue any more debt, equity was issued. Jensen **??**1986) predicted that if the market of corporate control was effective, the relationship between profitability and leverage was positive. If it was ineffective, however, mangers of profitable firms prefer to avoid the disciplinary role or debt, which would lead to a negative correlation between profitability and debt. Finally, the result indicated that corporate control of international firms was ineffective and the profitability was negatively correlated with leverage. If in the short run, dividends and investments were fixed and if debt financing was the dominant mode of external financing, then changed in profitability would be negatively correlated with changes in leverage. Therefore, based on the statistical result and inference, rejection of Hypothesis-2 is valid as the firm profitability has a positive correlation with firm capital structure.

Hypothesis 3: There is no significant difference in growth opportunities which decreases corporate leverage.

Hypothesis-3 predicts that growth opportunities decrease firm leverage. From the regression results in Table-5, the coefficient of growth opportunities was negatively and insignificantly related to TDTA, TDTE and STDTA. However, growth opportunities was positively and significantly correlation with LTDTA, while the coefficient of growth opportunities was found to be positively related to LTDTA, but statistically insignificant. These findings were contradictory with the research done by **??**yers (1977) and predicted that International firms with expected growth opportunities would maintain low short-term debt levels, but the growth opportunities also put pressure on retained earnings and pushed International firms into borrowing long-term debt. According to the result above, Hypothesis-3 is accepted that growth opportunities decrease firm leverage.

Hypothesis 4: There is no significant difference in asset tangibility which has a strong correlation with corporate capital structure.

Hypothesis-4 predicted that asset tangibility is expected to be positively related to corporate leverage. From the regression results in Table-5, the coefficient of assets tangibility was positive and significantly related to none of variables. This result showed that if corporate tangible assets were large, the ratio of short-term debt to total assets would be lower. However, the asset tangibility had positive and significant impact on all variables -TDTA, TDTE, LTDTA and STDTA, but was insignificantly related to none of variables. This findings was consistent with Rajan and Zingales (1995), Margaritis and Psillaki (2007). They argued that if a large fraction of a firm's assets are tangible, then assets should serve as collateral, diminishing the risk of the lender suffering the agency costs of debt (like risk shifting). They should also retain more value in liquidation. Therefore, the greater the proportion of tangible assets on the balance sheet (fixed assets divided by total assets), the more willing should lenders be to supply loans, and leverage should be higher. So, the result of regression model showed that International companies had high ratio of fixed assets to total assets would use more long-term debt as a main source of financing. Therefore, based on the result, Hypothesis-4 is accepted: asset tangibility is expected to be positively related to corporate leverage.

iii. Model (b): The Market Risk (Beta) Model

15 * p value $<$ 0.05 significance level

Hannan-Quinn Criterion (HQC) found negative and having similar value equal to -5 where, TDTA is preferred in case out of TDTE, LTDTA and STDTA in a statistical output, under the assumption that they are non-nested models, since they have the same independent variable.

Hypothesis-5: There is no significant difference in diversification index which is expected to have no effect on systematic risk.

Here, Table-6 depict the relationship between systematic risk beta and other variables in different measures of capital structure. For capital structure measured by TDTA the relationship between beta and In above Table-6, concept of R 2 and adjusted R-squared etc are similar to previous section discussed in Leverage Model having usual meaning and value interpreted in BETA model. Hence, the LS estimate is also the maximum likelihood estimate where, TDTE, LTDTA and STDTA are positive and found same value equal to133 and TDTA= 0.01, which significantly less as compared to other variables. The different criterion like AIC and SC have weak relationship mostly in negative value with respect to TDTA, TDTE, LTDTA and STDTA. The Durbin-Watson (DW) statistic = 1.90 in case of TDTE, which indicates that this model is better than the other variables and poorest is TDTA = -5.70. The

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diversification index is 0.014558 which is maximum among the four groups. This clearly states that as the corporate diversifies i.e. the corporate following the product diversification strategy tends to increase their systematic risk while increasing their profits marginally. Similarly for capital structure measured by TDTE

relationship between beta and diversification index is 0.011454 which is expected. In case of LDTA the value reflected by the table is 0.014815 and in case of STDTA the value is 0.012607, this signifying that product diversified corporate, which increase their long term debt decrease their systematic risk significantly. The effects on adjusted beta of the diversification strategy of conglomerate corporate are partially negated by the greater risk inherent in their use of increased debt. This leads to a conclusion that there exist a positive relationship between diversification index and systematic risk, thus accepting hypothesis-5 that there is a positive relationship between systematic risk and diversification index.

Hypothesis-6: There is no significant difference in the growth opportunities which decreases corporate systematic risk.

The Table-6 describes the relationship between systematic risk beta and corporate growth in different measures of capital structure. The values obtained in case of TDTA, TDTE, LTDTA and STDTA are 0.002480, 0.002593, 0.002204 and 0.002170 respectively. There is a very week or negligible relationship between systematic risk of the firm measured by beta and growth opportunities of corporate. Only in case of Long term debt to total assets i.e. LTDTA the value is slightly higher but in other cases the value is very insignificant. An important thing to be observed here is all the values of the table are positive, which means that there is a positive relationship between systematic risk and growth of a corporate, i.e. on increase in systematic risk the growth opportunities of the firm increases. Thus not accepting hypothesis-6 that the growth opportunities decreases with corporate systematic risk.

17 iv. Model (c): Corporate Performance (CP) Model

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From regression results in Table-7 to 10, the coefficient of TDTE was insignificantly and negatively related to PE, ROA and ROE while coefficient of TDTA, were insignificantly and positively related to ROA, ROE; coefficient of LTDTA were insignificantly and positively related to PE; and coefficient of STDTA positively and insignificantly related to PE and ROA. The R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA to test the relationship between capital structure and PE were 4.86%, 3.71%, 3.72%, 3.90%, respectively and the Adjusted R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA were -4.89%, -6.16%, -6.15%, -5.94%, respectively.

The low R-squared and adjusted R-squared value showed that PE variable was not suitable to measure the relationship between capital structure and firm market performance. Hence, it's obvious and excluded the regression model using PE from the analysis. The reason for the insignificance of PE could be that the share price did not reflect the actual situation for the firm. There might be other factors affecting a firm market performance other than the variable used in the study. Another reason could be that most investors still depended on the accounting measure of performance rather than the PE measure due to the investor favored payment of dividends or the inactivity of the stock market. Furthermore, including some firms in our sample that had negative PE affects the validity of the PE as a measure of performance.

The results of the estimation of the corporate performance model made the ROA and ROE the most powerful measures of performance in International firm case, because the R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA to test the relationship between capital structure and ROA were 3.26%, 2.32%, 7.50%, 4.11%, respectively and the Adjusted Rsquared value of the model (c) using TDTA, TDTE, LTDTA, STDTA were -6.66%, -7.69%, -1.97%, -5.39%, respectively. Similarly, The R-squared value of the corporate performance model using TDTA, TDTE, LTDTA, STDTA to test the relationship between capital structure and ROE were 16.55%, 17.54%, 17.54%, 19.56%, respectively and the Adjusted R-squared value of the model (c) using TDTA, TDTE, LTDTA, STDTA were 7.99%, 9.09%, 9.09%, 11.31%, respectively. Hypothesis-7: There is no significant difference in diversification index which is expected to have a strong effect on corporate performance.

This hypothesis predicted that diversification index which has strong effect on corporate performance. From the combined results in Table-7 to 10, as expected that coefficient of TDTA; TDTE; LTDTA; STDTA were significantly and negatively related to corporate performance measures like PE; PE, ROE; ROA, ROE and PE, ROE respectively. This result showed that diversification index has positive relation of corporate performance due to integrated opportunities for import intensive business groups with upcoming growth policies. Internationally, it is also largely observed in the empirical literatures, that corporate with larger base of international exposure have better performance than the ones with lesser exposure. It is often pointed out that these markets suffer from a scarcity of well-trained manpower. However, fact remains constant in India that country has one of the largest pools of the skilled and unemployed manpower. Hence, it is clear that it is better to look at the performance of the corporate as a whole rather than look at affiliate-level performance for small business groups, which might reveal distorted results. Therefore, Hypothesis-7 is accepted: diversification index which has strong effect on corporate performance.

Hypothesis-8: There is no significant difference in capital structure which effect corporate performance.

Hypothesis 8 predicted that a corporate capital structure which effect corporate performance. From the regression results in Table-7 to 10, as expected the coefficient of TDTA; TDTE; LTDTA; STDTA were significantly and negatively related to the performance measures like PE; PE, ROA and ROE; ROA and ROE; ROE

respectively. For example, the LDTA was significantly and negatively related to ROA and ROE. This result showed that higher long-term debt lead to lower ROA and ROE.

Moreover, it might present support for the proposition that due to outfit divergence, companies over-leveraged themselves, thus affecting their performance negatively. Here, present study results were consistent with the findings of other previous studies conducted by **??**oyer and Krishnan (1997), **??**eitun and Tian (2007). The negative and significant coefficient of LTDTA did not support Ravids's and Brick **??**1985) disagreement that long-term debt increased a corporate value, which could be due to the low ratio of long-term debt in the capital structure of International companies. According to the results, Hypothesis 8 is accepted wherein a corporate capital structure; which effect its corporate performance.

To summarize, the corporate capital structure was a significant determinant of corporate performance. A corporate leverage had positive and significant effect on corporate value PE, ROA and ROE. The significance of the corporate performance measure PE, ROA and ROE indicated that the International equity market was efficient, so the best corporate performance measure was all. Corporate growth opportunities had a positive and significant impact on the corporate value PE. Furthermore, firm size had also a positive impact on corporate value. This finding was further support the argument that bankruptcy costs increased with size, as well as economies of scale in transactions costs associated with short-term debt that were available to smaller corporate.

19 VI.

20 Conclusion

The paper investigates and measures the effect of product diversification strategy on capital structure and corporate performance, in Indian context. The study considers non-financial companies listed in National and Bombay Stock Exchange (NSE and BSE) for determining the relationship between significant variables like corporate growth, size, asset tangibility and profitability. Using multiple linear regressions as a tool for analysis, it can be concluded that diversification strategy have a statistically strong and positive relationship with corporate leverage. Similarly corporate performance and increase in asset tangibility reflects a strong and positive relationship with corporate capital structure. Growth opportunities on the other hand have a weak relationship with leverage and it is found that it tends to decreases firm leverage. Hence, it can be found out from the discussion that companies opting for product diversification strategies proved to be more profitable and hence also increase their tangible assets. Systematic risk and diversification strategy also have a positive relationship but again share a statistically weak or negligible relationship with corporate growth. Although diversification reduces the corporate operating risk, the systematic risk is basically unchanged because the corporate increases its financial leverage to take advantage of larger tax deductions of interest expense. Since there is minimal effect of systematic risk due to diversification, the corporate cost of capital remains indifferent.

Diversification strategy as well as leverage is found to have a positive relationship with corporate performance and that corporate capital structures have a significant impact on corporate value creation. . If the diversification can help reducing the systematic risk it would be helpful to all the Indian companies to manage their systematic risk as well as the cost of capital, thus increasing their profitability.

21 VII.

22 Suggestions for Future Research

Even though researchers have acknowledged some useful results, there are some important dimen-

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sions into which this study could be further extended. Future research could also obtain corporate descriptions in larger way. Use of important ratios reflecting the financial corporate performance like Tobin's Q, Entropy Index (EI), Uttons Index (UI) etc to measure diversification index could be used to draw more meaningful and comprehensive results. Due to elusive nature of research, there is difficulty in pursuing such lines of research specifically in its implementation. Most of the studies discussing the effect of diversification strategy on performance and other variables have concluded on confirmatory analysis. Very few studies have dealt with the implementation perspective. On this issue, this research area has received criticism globally. Therefore the researchers suggest that if this weakness is addressed aptly, this research could be a breakthrough for Indian companies for achieving sustainable growth.

VIII. [1]

Figure 1:

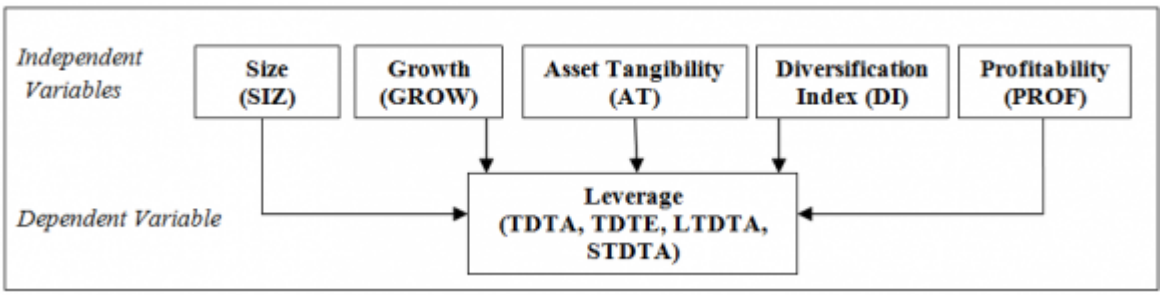


Figure 2:

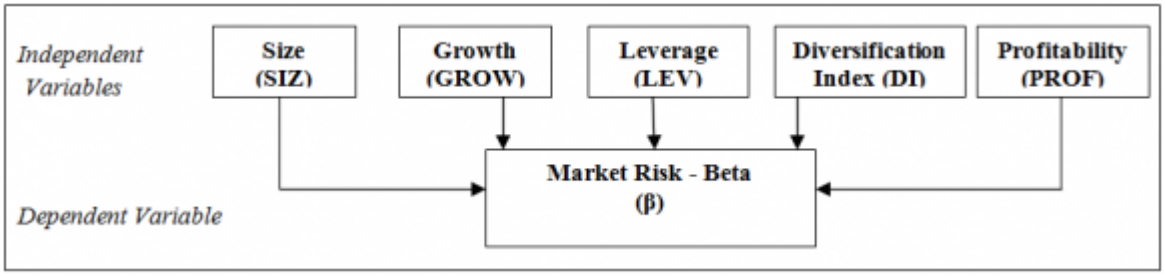
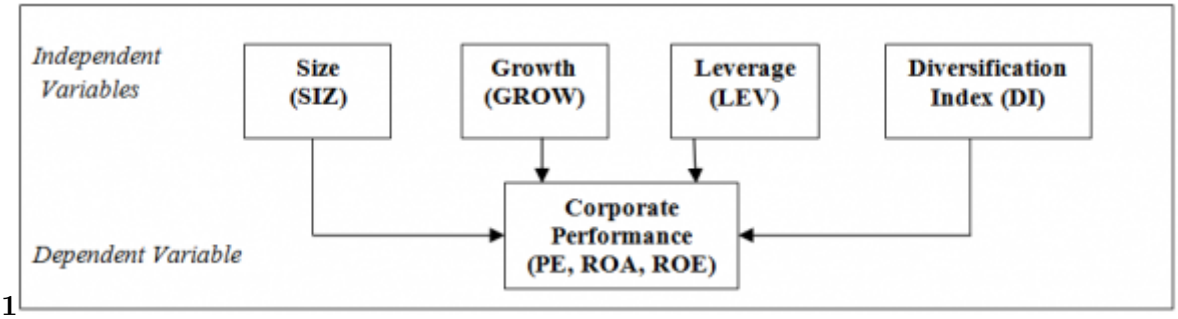


Figure 3:



1

Figure 4: Figure 1 :

1

Figure 5: Table 1 :

2

	Leverage (LEV) Model			
	PROF	AT	GROW	DI
PROF	1			
AT	0.11	1		
GROW	0.05	0.26	1	
DI	0.04	-0.23	0.07	1

Figure 6: Table 2 :

4

Variable	TDTA	TDTE	LTDTA	STDTA	PE	ROA	ROE	PROF	GROW	SIZ	AT	DI
Mean	0.34	1.63	0.12	0.11	17.37	0.04	6.35	0.13	0.71	3.52	0.34	0.4
Median	0.35	0.82	0.07	0.08	10.93	0.03	4.27	0.11	0.93	3.51	0.29	0.5
Max	0.97	13.3	0.55	0.68	79.7	0.25	27.74	0.33	1	4.9	0.99	0.9
Min	0	0	0	0	-18.71	-0.1	-17.87	0	0	1.31	0	0
Std. Dev.	0.25	2.25	0.15	0.14	21.84	0.05	8.68	0.07	0.42	0.76	0.3	0.2
Skewness	0.24	3.34	1.32	2.3	1.43	1.2	0.47	1.13	-1.09	-0.34	0.54	-0.3
Kurtosis	2.21	17.42	3.7	9.24	4.57	7.22	3.98	4.18	2.27	3.27	2.08	2.5
J-Bera	1.58	463.16	13.72	110.21	19.53	43.3	3.39	12	9.68	1	3.67	1.3
Probability	0.45	0	0	0	0	0	0.18	0	0.01	0.61	0.16	0.5

Figure 7: Table 4 :

5

	TDTA	TDTE	LTDTA	STDTA
Constant	0.30	3.75	0.09	0.10
PROF	-0.62	-10.31	-0.64	0.12
t-Statistics	-1.33	-2.19	-2.02	0.48
Prob.	0.19	0.03	0.05	0.63
GROWTH	-0.09	-0.47	0.02	-0.09
t-Statistics	-1.09	-0.57	0.42	-2.00
Prob.	0.28	0.57	0.68	0.05
AT	0.57	2.15	0.18	0.22
t-Statistics	4.83	1.81	2.22	3.43
Prob.	0.00	0.08	0.03	0.00
DI	0.00	-4.09	0.05	0.16
t-Statistics	-0.02	-2.49	0.47	1.83
Prob.	0.98	0.02	0.64	0.07
No. Observations	44	44	44	44
R-squared	0.41	0.23	0.23	0.38
Adjusted R -squared	0.34	0.13	0.13	0.29
S.E. of regression	0.21	2.10	0.14	0.11
Sum squared residual	1.62	167.02	0.76	0.50
Log likelihood (LL)	10.15	-91.78	26.98	3607503.00
Akaike info criterion (AIC)	-0.19	4.44	-0.95	-1.37
Schwarz criterion (SC)	0.05	4.69	-0.71	-1.12
Hannan-Quinn criterion (HQC)	-0.10	4.53	-0.86	-1.28
Durbin-Watson stat (DW)	1.81	2.22	2.51	2.06
p value < 0.05 significance level				

Figure 8: Table 5 :

6

TDTA TDTE LTDTA STDTA

Figure 9: Table 6 :

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PE ROA ROE

Figure 10: Table 7 :

8

PE ROA ROE

Figure 11: Table 8 :

9

PE ROA ROE

Figure 12: Table 9 :

10

PE ROA ROE

Figure 13: Table 10 :

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