Risk- Return Performance of Diversified Firms in India

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Abstract

In view of globalization and increasing business competition, the companies are looking out for new means of profit maximization and increasing their shareholder value. Diversification is one such sought-after phenomenon in which the companies opt for increasing profits and simultaneously reducing risks. This research tried to find answer to the question, whether product diversification reduces the systematic risk of the companies while increasing their shareholder value or not? Two regression models were framed for the study which tested the hypotheses for market risk as well as for corporate performance. The results of the study revealed that with an increase in the corporate risk, there is an increase in the profitability. Similarly, a positive relationship was observed between systematic risk and growth of a corporate, that is, with an increase in systematic risk, the growth opportunities of a firm increase. Whereas, the research could not find any significant relationship between corporate size and systematic risk, beta.

Key words: **diversification strategy, risk and return, profitability, systematic risk**

JEL Classification : G31, G32, G38

Paper Submission Date: October 25, 2015 ; Paper sent back for Revision : May 6, 2016 ; Paper Acceptance Date : June 14, 2016

The most important reason for companies to diversify into different product lines 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 with 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 preempting the product space. Although the general views on the phenomenon are quite inconclusive, one possible explanation has been given by Scott (1995). The first is that it may generate multi market economies, thereby increasing corporate profit.

When a corporate chooses to diversify, it tries to relate a new business to the existing businesses of the corporate for creating value for the organization. Therefore, it is important to look at the value creation rationale of diversification. Diversification activity creates value when economies of scope exist among the multiple businesses in the organization, and exploiting these scope economies can be done more efficiently by a corporate rather than by shareholders on their own. 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 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.

Elango, Talluri, and Hult (2013) in their research established that diversification positively influences risk-adjusted performance. Their finding is promising for firms, as it indicated that operations, if managed well,

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through exposure to varied markets, can lead to firms' increased risk-adjusted performance. The results will be of help to the decision-makers to better understand operations of service firms and present a strategy for achieving success by effectively managing diversification. O'Brien, David, Yoshikawa, and Delios (2014) empirically tested a large sample of Japanese firms for supporting transaction cost economics. The study revealed that firms accrued higher returns from leveraging their resources and capabilities into new markets when managers were shielded from the rigors of the market governance of debt, particularly, bond debt.

Chen and Yu (2012) through their study showed a U-shaped relationship between managerial ownership and corporate diversification. Their result was similar to the previous studies in the domain. Purkayastha, Manolova, and Edelman (2012), based upon this study, proposed that related diversification was a more preferred strategy in developed economies and should be based on specific resources. On the other hand, unrelated diversification is appropriate in emerging economies and its base should be generic resources.

Impact of Diversification on Systematic Risk

Systematic risk is defined as the volatility of a particular stock with respect to the market. This formula is used by many researchers and economists interested to study the risk - return pattern of diversified firms, including Montgomery and Singh (1984). They tried to examine the relationship between diversification strategy and systematic risk beta and found that betas for unrelated diversifiers were significantly higher than those of other firms for Rumelt's six diversification categories. The study also emphasized that diversification strategy not only increased the returns, but also significantly reduced the systematic risk of the firms. On similar lines, Bettis and Mahajan (1985) also suggested that diversified firms were able to reduce their systematic risk significantly and increased returns. The authors also very strongly confirmed that there was still some level of correlation between related diversification and firm performance, but the unrelated firm diversification bore a negative correlation with a firm's financial performance.

Studies have also indicated two major effects on systematic risk, which operate in opposite directions and usually offset each other. 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 an increase in leverage, which tends to increase the systematic risk. It was categorically pointed that the two effects are of similar magnitude and, therefore, it was concluded that diversified firms trade off operating risks for financial risks.

The second school of thought narrates an entirely different story. Bowman (1979) categorically commented that systematic risk is not a function of earning variability, growth size, or dividend policy. Amit and Livnat (1988), in their cross-sectional path analysis, on the other hand, had earlier confirmed that corporates trade off the reduction in operating risk due to diversification with increased financial leverage, but their systematic risk remains the same. Lubatkin and Chatterjee (1994) and Manjunatha (2009) also supported this and proved that the relationship between corporate diversification and both forms of stock return risks generates a U-shaped graph. Thus, the authors 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 (1985) examined the relationship between diversification effect on performance using multiple measures of performance, namely accounting and market measurements. Interestingly, Thompson (1984) in his study linked the impact of strategic diversification on a market-based measure of firms. His study did not support the positive association between systematic risk and conglomerate status found in many U.S. studies.

After going through the extensive literature above, it can be concluded that there are different views of various researchers on the risk associated with diversified firms and the returns associated with them. The present study is an attempt to establish a relationship between the risk-return relationships of those firms that have followed the diversification strategy. It has been found that as a company diversifies, there appears to be a change in the risk profile of the firm, and thus, expected changes can be seen in the returns of that company. This is particularly

important because the changes in firm returns bring about a change in the market returns of a company, and thus, increases / decreases the shareholder value of the firm. Based on the literature review, the next section will discuss the objectives of the study which are linked with the hypotheses in the corresponding sections.

Objectives and Linked Hypotheses

The objective of the study is to observe the impact of corporate diversification on financial risk and corporate financial performance of companies listed on the Indian stock market. Additionally, I wanted to measure the change in the financial risk of diversified companies and its effect on the corporate growth of these companies. The hypotheses of the study are:

- **H1:** The diversification index is expected to have no effect on systematic risk.

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

- **H2 :** Corporate profitability is expected to have a strong effect on systematic risk.

Gahlon and Stover (1979) employed a model which utilized 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 of the study confirmed 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.

- **H3 :** Growth opportunities decrease corporate systematic risk.

Bowman (1979) and other researchers provided theoretical biases for empirical research into the relationship between risk and financial variables. In a theoretical relationship between systematic risk, corporate leverage and accounting beta, the researcher observed and categorically commented that systematic risk was not a function of earning variability, growth, and so forth. Thompson (1984) also emphasized that there remained other possible managerial motives besides risk reduction including growth and other objectives which might be advanced by diversification.

- **H4 :** Corporate size is expected to have a weak effect on corporate systematic risk.

Bowman (1979) ascertained a theoretical relationship between systematic risk and the corporate leverage and accounting beta. The researcher observed and categorically commented that systematic risk was not a function of earning variability and size of publically traded companies.

- **H5 :** Diversification index 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. Alesón and Escuer (2002) examined the impact of product diversification on corporate performance. The results indicated that there was a positive correlation between levels of product diversification and corporate performance. Zhang (2011) also found a positive relationship between the listed textile corporate unrelated diversification and their corporate value.

- **H6 :** Capital structure has a significant effect on corporate performance.

Ramachandran and Nageswara 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 helped mitigate the endogenous nature of capital structure and corporate performance, since it was assumed that the downturn was not anticipated by industry participants. Also, inclusion of lagged values of debt ratio ensured that spurious relation between contemporaneous values of debt ratio and corporate performance was not obtained. It was thus confirmed that corporates which were over-levered compared to the industry median experienced lower sales growth and profitability vis-à-vis a benchmark corporate which assumed industry median characteristics. This lends support to the hypothesis that external financing induces financial fragility that leads to a reduction in marketing spending at the time of distress.

- **H7 :** Growth opportunities increase corporate performance significantly.

The literature survey considers growth as one of the most important parameters for corporate performance. Recent studies by Maggina and Tsaklanganos (2012) provided evidence drawn from publicly traded companies in Greece on the predictability of assets growth with respect to corporate performance and indicated that assets growth was predictable at a 85.7% rate in large companies. Greve (2008) in a research study conducted on the general insurance industry showed that corporates grew more when their performance goals were satisfied.

- **H8 :** Corporate size is expected to have a strong effect on corporate performance.

The size of a corporate is considered to be an important determinant of a corporate's profitability as larger corporates can enjoy economies of scale and these can favourably impact the profitability (Penrose, 1959). Larger corporates according to Sheppard (1994) may also be able to leverage their market power, thus having an effect on profitability. A positive relationship between corporate size and its performance is expected in the study. Not only the above mentioned studies, but also studies conducted by various researchers like Antonkik (2006) ; Banker, Wattal, and Plehn - Dujowich (2011) ; Barton and Gordon (1988) ; Baysinger and Hoskisson (1989) ; Bowman (1979) ; and Chakrabarti, Singh, and Mahmood (2002) proved a strong relationship between corporate size and profitability.

Data and Methodology

The data for the study was taken from a well known academic datahouse known as Prowess of CMIE (Centre for Monitoring Indian Economy). The sample for the study is a set of 44 companies, which diversified during the year 2006 and are listed on the NSE (National Stock Exchange) as well as BSE (Bombay Stock exchange) of India. Data for 8 years, that is, from 2006 - 2013 were considered for the study. These sample companies are from different sectors like manufacturing, construction sector, industry automation sector, and so forth. This panel of companies helped us in uniformly studying the relationship of the variables in various sectors and to develop the policy framework accordingly.

According to Kenny (2009), the impact of diversification strategy on corporate performance is observed for achieving sustainability with a competitive advantage. The extent of diversification can be measured using various indexes found in the literature like Herfindahl index (HI), Entropy index (EI), and Uttons index (UI), and so forth based on revenues, employees, and so forth.

Revenue-based Herfindahl index (HI) is used in the present study as a proxy of diversification strategy developed by the corporates in the product market. This index is the sum of squares of the sales of the corporates by segment as a fraction of total corporate sales. If the corporate has only one segment, Herfindahl index (HI) is one. Due to its construction, Herfindahl index (HI) falls as the degree of corporate diversification increases. Furthermore, the systematic risk of the companies is measured by calculating the covariance of market movement with respect to that of the stock movement (i.e. Cov (*Ri, Rm*)/Var (*Rm*)). This is the closest proxy to calculate systematic risk and is the most sought after method to compute the market risk as observed and recommended by various studies conducted in the past.

Model Development for the Study

In the next section, the hypotheses for the study are tested using multiple linear regression. Two regression models have been framed which test the hypotheses for market risk as well as corporate performance. The models are named as market risk model and corporate performance model, correspondingly. The model description as well as dependent and independent variables of the models are mentioned below separately.

(i) Market Risk Model : The dependent variable of the model is systematic risk beta, and the independent variables are diversification, profitability, corporate growth, and size. The equation (1) for the model is given below:

$$y_i = \beta_0 + \beta_1\ DI_i + \beta_2 PROF_i + \beta_3 GROW_i + \beta_4 SIZ_i + u_i \quad \text{.....(1)}$$

(ii) Corporate Performance Model : The dependent variable for this model is corporate performance value, which is alternatively measured by ROA and ROE. Subsequently, the independent variables are diversification index, corporate leverage, corporate growth, and size. The equation for the model is given below in equation (2):

$$y_i = \beta_0 + \beta_1 DI_i + \beta_2 LEV_i + \beta_3 GROW_i + \beta_4 SIZ_i + u_i \quad \text{.....(2)}$$

Descriptive Statistics and Regression Analysis

This section presents the descriptive statistics as well as regression analysis. The summary of the descriptive statistics is mentioned in the Table 1. To estimate the regression equation, kindly refer to Table 4. From the descriptive data of leverage ratios, it can be concluded that diversified companies in the Indian stock exchange rely on short-term debt than long-term debt as the key source of funds for their business operations. Since stock markets, bond markets, and mutual funds markets were undeveloped ; commercial bank systems played a necessary and important role in providing funds to these corporates .

The correlation matrix for the variables is outlined in the Table 4 in order to examine the correlation between the explanatory variables for Model 1. Corporate size has a strong and positive relationship with corporate growth, that is, the table value is 0.283645. It clearly indicates that as a corporate diversifies, its size increases, which increases its risk bearing capacity. This is opposite to the co-insurance effect, which suggests that corporates can reduce risk by diversifying their activity and, in turn, the reduced risk can increase the debt capacity of the corporate. It can also be inferred from the Table 4 that corporate size and corporate growth have a very strong and a

Table 1. Summary Statistics of the Explanatory Variables

Variable	Mean	Median	Max	Min	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability
TDTA	0.34	0.35	0.97	0.00	0.25	0.24	2.21	1.58	0.45
TDTE	1.63	0.82	13.30	0.00	2.25	3.34	17.42	463.16	0.00
LTDTA	0.12	0.07	0.55	0.00	0.15	1.32	3.70	13.72	0.00
STDTA	0.11	0.08	0.68	0.00	0.14	2.30	9.24	110.21	0.00
ROA	0.04	0.03	0.25	-0.10	0.05	1.20	7.22	43.30	0.00
ROE	6.35	4.27	27.74	-17.87	8.68	0.47	3.98	3.39	0.18
PROF	0.13	0.11	0.33	0.00	0.07	1.13	4.18	12.00	0.00
GROW	0.71	0.93	1.00	0.00	0.42	-1.09	2.27	9.68	0.01
SIZ	3.52	3.51	4.90	1.31	0.76	-0.34	3.27	1.00	0.61
DI	0.49	0.51	0.95	0.00	0.23	-0.37	2.55	1.37	0.50
BETA	0.01	0.00	0.05	-0.01	0.01	1.78	5.94	39.13	0.00

Note: TDTA = total debt to total assets; TDTE = total debt to total equity; LTDTA = long-term debt to total assets; STDTA = short-term debt to total assets; ROA = profit after tax / total assets; ROE = profit after tax / no. of shares outstanding; PROF = EBIT + depreciation / total assets; GROWTH = total assets = book value of equity + market value of equity / total assets; SIZE = ln(sales); DI = Herfindahl Index, Beta (Systematic Risk) = Cov (*Ri, Rm*)/Var (*Rm*)

Table 2. Correlation Matrix of the Explanatory Variables for Market Risk Model

	PROF	GROW	SIZ	DI
PROF	1			
GROW	0.048190	1		
SIZ	-0.032907	0.283645	1	
DI	0.03586	0.069300	0.434351	1

Note: PROF = Ebit + depreciation / total assets; GROWTH = total assets - book value of equity + market value of equity / total assets; SIZE = ln(sales); DI = 1-Herfindahl Index, Beta (Systematic Risk) = Cov (*Ri, Rm*)/Var (*Rm*)

Table 3. Correlation Matrix of the Explanatory Variables for Corporate Performance Model

	TDTA	TDTE	LTDTA	STDTA	GROW	SIZ	DI
TDTA	1						
TDTE	0.404417	1					
LTDTA	0.601115	0.242646	1				
STDTA	0.643910	-0.011491	0.136829	1			
GROW	0.019039	-0.086554	0.161482	-0.134348	1		
SIZ	0.036245	-0.108538	0.120342	-0.038451	0.283645	1	
DI	-0.169796	0.199176	-0.128000	-0.359896	0.069300	0.434351	1

positive correlation with each other, that is, the table value is 0.283645. Corporate growth and profitability also share a positive relationship (table value 0.048190). These facts clearly show that as a corporate diversifies, its risk increases along with the corporate's size. This helps the corporate to increase its profitability and increase corporate growth sustainably.

The correlation matrix for the variables is outlined in Table 2 and Table 3 in order to examine the correlation

Table 4. Estimate Results for the Market Risk Model

		Beta
Constant		-0.000582
PROF		0.006002
	t-Statistics	0.217857
	Prob.	0.8287
GROWTH		0.002483
	t-Statistics	0.524223
	Prob.	0.6031
SIZE		-0.000372
	t-Statistics	-0.129397
	Prob.	0.8977
DI		0.014113
	t-Statistics	1.534064
	Prob.	0.1331
No. Observations		**44**
***R*-squared**		**0.075718**
Adjusted *R*-squared		**-0.019080**
S.E. of regression		**0.012390**
Sum squared residual		**0.005987**
Log likelihood		**133.4202**
***F*-statistic**		**0.798727**
Prob (*F*-statistic)		**0.533368**
Mean dependent var		**0.007482**
S.D. dependent var		**0.012273**
Akaike info criterion		**-5.837282**
Schwarz criterion		**-5.634533**
Hannan-Quinn criterion		**-5.762093**
Durbin-Watson stat		**1.816341**

Note: ROA = profit after tax / total assets; ROE = profit after tax / shareholder equity; GROWTH = total assets - book value of equity + mark value of equity / total assets; SIZE = ln(sales); DI =1- Herfindahl Index, Beta (Systematic Risk) = Cov (*Ri, Rm*)/Var (*Rm*). All * *p* values < 0.05 significance level.

between the explanatory variables for the corporate profitability model. The results show that there is a positive relationship between growth and TDTA, growth and LTDTA ; while TDTE and STDTA have a negative relationship with growth.

Corporate size has a positive relationship with all leverage ratios. Corporate size is seen to have a positive relation with TDTA and LTDTA ; whereas, a negative relation is observed in case of TDTE and STDTA. This shows that large multinational companies like to have long term debt for their companies in order to increase their profitability through financial gearing. Diversification is expected to have a positive correlation with size, declaring that with an increase in diversity of a company, the firm size increases.

Model 1: Market Risk Model

↳ **H1:** Diversification index is expected to have no effect on systematic risk.

The Table 4 depicts the relationship between systematic risk beta and other variables. As a corporate diversifies, that is, a corporate following a product diversification strategy tends to increase its systematic risk while increasing its profits marginally. The effects on adjusted beta of the diversification strategy of conglomerate corporate are partially negated by the greater risk inherent in its use of increased debt. This leads to a conclusion that there exists a positive relationship between diversification index and systematic risk, thus accepting H1 that there is a positive relationship between systematic risk and diversification index.

↳ **H2 :** Corporate profitability is expected to have a strong effect on systematic risk.

The Table 4 describes the relationship between systematic risk of a company measured by beta and profitability under different measures of the capital structure. As the risk of a corporate increases, the profitability is expected to rise. The regression value, as seen in the Table 4, is 0.006002. Thus, it can be seen that profitability bears a positive, but not a very strong relationship with systematic risk. Thus, it is concluded that on the basis of the table value observed, the hypothesis H2 is accepted.

↳ **H3 :** Growth opportunities decrease corporate systematic risk.

The Table 4 describes the relationship between systematic risk beta and corporate growth in different measures of capital structure. There is a very week or negligible relationship between systematic risk of the firm measured by beta and growth opportunities of corporates. An important thing to be observed here is that the values of the table are positive, which means that there is a positive relationship between systematic risk and growth of a corporate, that is, on an increase in systematic risk, the growth opportunities of a firm increases. Thus, H3 is rejected that the growth opportunities decrease with corporate systematic risk.

↳ **H4:** Corporate size is expected to have a weak effect on corporate systematic risk.

The Table 4 depicts the relationship between systematic risk beta and corporate size. The value is negative, that is, -0.000372 , but the statistically insignificant relationship between size and systematic risk indicates that as the size of a corporate increases, the systematic risk of a corporate keeps on reducing because the risk bearing capacity of the corporate increases. Thus, it can be concluded that size of the corporate has no significant relationship with the systematic risk, thus accepting the hypothesis H4.

Model 2 : Corporate Performance Model

↳ **H5 :** Diversification index is expected to have a strong effect on corporate performance.

This hypothesis predicts that the diversification index has a strong effect on corporate performance. From the combined results in Tables 5, 6, 7, and 8, the coefficient of TDTE, LTDTA, and STDTA are significantly and negatively related to corporate performance measure, that is, ROE, but have a strong and positive relationship with ROA. This result shows that the diversification index has a positive relation with corporate performance due to integrated opportunities for import intensive business groups with upcoming growth policies. The results of the study are consistent with the findings of other previous studies conducted by Krishnan and Moyer (1997) and

Model 2. Corporate Performance Model

Table 5. Estimate Results for the Corporate Performance Model Using TDTA

	ROA	ROE
Constant	0.035016	-8.230700
TDTA	0.022209	0.059071
t-Statistics	0.638459	0.011543
Prob.	0.5269	0.9908
GROWTH	0.004896	4.719147
t-Statistics	0.226816	1.486177
Prob.	0.8218	0.1453
SIZE	0.002434	3.030139
t-Statistics	0.184415	1.560504
Prob.	0.8546	0.1267
DI	-0.032410	1.145462
t-Statistics	-0.756234	0.181679
Prob.	0.4541	0.8568
No. Observations	44	44
R-squared	0.032605	0.165552
Adjusted *R*-squared	-0.066615	0.079968
S.E. of regression	0.056581	8.323913
Sum squared residual	0.124856	2702.213
Log likelihood	66.59199	-153.0213
F-statistic	0.328609	1.934373
Prob (*F*-statistic)	0.857050	0.124007
Mean dependent var	0.038918	6.349550
S.D. dependent var	0.054786	8.678127
Akaike info criterion	-2.799636	7.182787
Schwarz criterion	-2.596887	7.385535
Hannan-Quinn criterion	-2.724447	7.257976
Durbin-Watson stat	1.895151	1.878327

Note: ROA = profit after tax / total assets; ROE = profit after tax / shareholder equity; TDTA = total debt to total assets; GROWTH = total assets - book value of equity + mark value of equity / total assets; SIZE = ln(sales); DI =1- Herfindahl Index, All * *p* values < 0.05 significance level.

Table 6. Estimate Results for the Corporate Performance Model Using TDTE

	ROA	ROE
Constant	0.043773	-7.118281
TDTE	-0.000705	-0.402337
t-Statistics	-0.174830	-0.685560
Prob.	0.8621	0.4970
GROWTH	0.004680	4.625705
t-Statistics	0.215568	1.464149
Prob.	0.8304	0.1512
SIZE	0.002973	2.762996
t-Statistics	0.221148	1.412407
Prob.	0.8261	0.1658
DI	-0.035959	2.320931
t-Statistics	-0.821051	0.364127
Prob.	0.4166	0.7177
No. Observations	44	44
R-squared	0.023259	0.175486
Adjusted *R*-squared	-0.076920	0.090920
S.E. of regression	0.056854	8.274220
Sum squared residual	0.126062	2670.046
Log likelihood	66.38048	-152.7578
F-statistic	0.232174	2.075142
Prob (*F*-statistic)	0.918606	0.102679
Mean dependent var	0.038918	6.349550
S.D. dependent var	0.054786	8.678127
Akaike info criterion	-2.790022	7.170811
Schwarz criterion	-2.587273	7.373560
Hannan-Quinn criterion	-2.714833	7.246000
Durbin-Watson stat	1.892159	1.855918

Note: ROA = profit after tax / total assets; ROE = profit after tax / shareholder equity; TDTE = total debt to total equity; GROWTH = total assets - book value of equity + mark value of equity / total assets; SIZE = ln(sales); DI =1- Herfindahl Index, All * *p* values < 0.05 significance level

Zeitun and Tian (2007). The negative and significant coefficient of LTDTA does not support Brick and Ravid's (1985) disagreement that long-term debt increases a corporate's value, which could be due to the low ratio of long-term debt in the capital structure of international companies. Hence, it is clear that it is better to look at the performance of the corporate as a whole rather than looking at affiliate-level performance for small business groups, which might reveal distorted results. Therefore, H5 is accepted.

↳ **H6 :** Capital structure has a significant effect on corporate performance.

Table 7. Estimate Results for the Corporate Performance Model Using LTDTA

	ROA	ROE
Constant	0.044981	-7.997202
LTDTA	-0.086104	-5.931887
t-Statistics	-1.488905	-0.685863
Prob.	0.1446	0.4969
GROWTH	0.008769	4.989481
t-Statistics	0.412294	1.568574
Prob.	0.6824	0.1248
SIZE	0.006478	3.241748
t-Statistics	0.499315	1.670765
Prob.	0.6204	0.1028
DI	0.050209	-0.292472
t-Statistics	1.200802	-0.046771
Prob.	0.2371	0.9629
No. Observations	44	44
R-squared	0.075068	0.175494
Adjusted *R*-squared	-0.019796	0.090930
S.E. of regression	0.055325	8.274176
Sum squared residual	0.119375	2670.018
Log likelihood	67.57952	-152.7576
F-statistic	0.791319	2.075267
Prob (*F*-statistic)	0.537959	0.102662
Mean dependent var	0.038918	6.349550
S.D. dependent var	0.054786	8.678127
Akaike info criterion	-2.844523	7.170800
Schwarz criterion	-2.641775	7.373549
Hannan-Quinn criterion	-2.769334	7.245990
Durbin-Watson stat	1.921164	1.842297

Note: ROA = profit after tax / total assets; ROE = profit after tax / shareholder equity; LTDTA = long-term debt to total assets; GROWTH = total assets - book value of equity + mark value of equity / total assets; SIZE = ln(sales); DI = 1-Herfindahl Index, All * *p* values < 0.05 significance level.

Table 8. Estimate Results for the Corporate Performance Model Using STDTA

	ROA	ROE
Constant	0.032153	-6.398553
STDTA	0.064745	-12.10529
t-Statistics	0.939158	-1.208468
Prob.	0.3534	0.2341
GROWTH	0.008223	4.087123
t-Statistics	0.377969	1.292962
Prob.	0.7075	0.2036
SIZE	0.001181	3.456244
t-Statistics	0.089137	1.795749
Prob.	0.9294	0.0803
DI	-0.021294	-2.001551
t-Statistics	-0.469610	-0.303795
Prob.	0.6412	0.7629
No. Observations	44	44
R-squared	0.04112	0.195668
Adjusted *R*-squared	-0.053928	0.113173
S.E. of regression	0.056244	8.172323
Sum squared residual	0.123371	2604.688
Log likelihood	66.85525	-152.2126
F-statistic	0.449935	2.371865
Prob (*F*-statistic)	0.771782	0.068965
Mean dependent var	0.038918	6.349550
S.D. dependent var	0.054786	8.678127
Akaike info criterion	-2.811602	7.146028
Schwarz criterion	-2.608853	7.348777
Hannan-Quinn criterion	-2.736413	7.221217
Durbin-Watson stat	1.832902	1.779733

Note: ROA = profit after tax / total assets; ROE = profit after tax / shareholder equity; STDTA = short-term debt to total assets; GROWTH = total assets - book value of equity + mark value of equity / total assets; SIZE = ln(sales); DI =1- Herfindahl Index, All* *p* values < 0.05 significance level.

H6 assumes that a corporate's capital structure affects its performance. From the regression results depicted in the Tables 5 - 8, as expected, the coefficient of TDTE, LTDTA , and STDTA are significantly and negatively related to the performance measures like ROA and ROE; ROA and ROE; ROE, respectively . For example, the LDTA is significantly and negatively related to ROA and ROE. This result shows that higher long-term debt leads to lower ROA and ROE. According to the results, H6 is accepted.

↳ **H7 :** Growth opportunities increase corporate performance significantly.

From the regression results given in the Tables 5 -8 , growth is found to have a positive and significant effect on the corporate performance measures ROA and ROE. The high growth rates are associated with lower cost of capital and high corporate value, ROA and ROE. This finding is not consistent with the results obtained by Myers (1977), but supports the pecking order theory that high growth corporates have a greater need for funds and ,therefore, could be expected to borrow more. According to the results, H7 is accepted.

↳ **H8 :** Corporate size is expected to have a strong effect on corporate performance.

According to H8, it is predicted that corporate size is expected to have a strong effect on a corporate performance. From the regression results from Tables 5 - 8, the coefficient of corporate size is significantly and positively related with ROA and ROE for corporate performance model using TDTA, TDTE, LTDTA, and STDTA. The significant effect of corporate size on corporate market value is consistent with previous studies of many researchers. This result is consistent with previous findings of Zeitun and Tian (2007). However, the coefficient of corporate size is significantly and positively related with ROA and ROE for model corporate performance using all variables - TDTA, TDTE, LDTA, and STDTA. Based on the regression results, hypothesis H8 is accepted, where corporate size is expected to have a strong effect on a corporate performance.

From the results of the regression analysis, it can be summarized that financial leverage of multinational companies increases with an increase in their diversification level. Comparing this to the result of some of the important studies, it can be said that corporates following both types of diversification have an upper level of profitability and productivity than the international companies pursuing a single diversification strategy. On the other hand, this study reveals a positive relationship of corporate profitability with corporate leverage. Similarly, the coefficient of growth opportunities is negatively and insignificantly related to TDTA, TDTE, and STDTA. However, growth opportunities have a positive and insignificant correlation with LTDTA.

Discussion

The study discusses the impact of diversification strategy on systematic risk beta. Regression results confirm that the relationship between capital structure measured by TDTA, beta, and diversification index value is 0.014558, which clearly states that as a corporate diversifies, that is, a corporate following the product diversification strategy tends to increase its systematic risk while increasing its profits marginally. However, as far as other ratios like TDTA, TDTE, and STDTA are concerned, more or less, it can be deduced from the observations that there is no significant relationship between systematic risk beta and capital structure. The table values, as observed in case of corporate profitability, clearly reflect a significant value, indicating that with an increase in the risk of the corporate, the profitability is expected to rise. On similar lines, a positive relationship is observed between systematic risk and growth of a corporate, that is, on an increase in systematic risk, the growth opportunities of a firm increase. However, corporate size has no significant relationship with the systematic risk, beta.

Research Implications

The study found a significant relationship between capital structure and the other two variables, corporate profitability and corporate size. This clearly reflects that by increasing the debt finance to a certain range, there will be a positive impact upon the profitability as well, as the assets of the company will also grow. This will directly impact the shareholder value and the stock price of that particular corporate. 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. Corporate performance is seen to have a positive relation with both corporate growth and corporate size. This implies that diversified corporates improve their financial performance due to enhanced competitiveness and this leads to greater corporate growth and increased corporate size.

Conclusion

A number of authors have suggested the utility and analysis of corporate diversification strategy in light of corporate capital structure, systematic risk, and financial corporate performance. Following this line of research, the relationship between capital structure and corporate diversification strategy was studied for a sample of 44 Indian corporates during the period from 2006-2013. According to the analysis, systematic risk was theoretically expected to have a positive relationship with capital structure, but it is found to have no relationship. Moreover, a positive but statistically weak relationship exists between systematic risk and other parameters like corporate profitability and corporate size. Similarly, beta is a very close proxy to capture the systematic risk of the corporate, but many researchers believe that there are many anomalies in measuring the systematic risk of the corporate. Due to this, researchers like Hansen (2012) felt that there are important conceptual challenges that go along with the use of explicit dynamic economic models for measuring confront risk and uncertainty.

In the light of all the above justifications, it can be concluded that the trend towards increasing degrees of corporate diversification could prove to be quite valuable to the strategists who are attempting to improve their corporate performance through effective management of the diversity experienced in a multi business corporate. Moreover, future studies could employ different measures of product and geographical diversification, according to the degree of relatedness of product segments, to check the effect of the said variables on capital structure decisions.

Limitations of the Study and Scope for Further Research

Every study has certain limitations like non availability of data, choice of appropriate dependent variables, and other such problems, and this study also faced several problems. This data set comprised of those manufacturing companies which were listed both on NSE and BSE and diversified during the study period. Due to this, the data set comprised of only 44 non - financial firms. The results of the study could be further improved by using better performance ratios like Tobin's Q, and so forth, which are popular and widely accepted measures of gauging corporate performance.

Even though I obtained some useful results, there are some important dimensions into which this study could be extended further. Due to the elusive nature of the research, I found it difficult to pursue research on different measures of measuring performance and diversification, and 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 global criticism. Therefore, I suggest that if this weakness is addressed aptly, this research could be a breakthrough for Indian companies for achieving sustainable growth.

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